THE REPORT

OF THE

PRESIDENT

OF

QUEEN'S COLLEGE, CORK,

FOR

THE ACADEMIC SESSION 1874–5;

WITH APPENDICES.

Presented to both Houses of Parliament by Command of Her Majesty.

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THE REPORT

OF THE

PRESIDENT OF QUEEN'S COLLEGE, CORK,

FOR

THE ACADEMIC SESSION 1874-5.

TO THE QUEEN'S MOST EXCELLENT MAJESTY.

MAY IT PLEASE YOUR MAJESTY—

In compliance with a provision of the Act of Parliament founding the Queen's Colleges (8 and 9 Vict., c. 66, s. 20), and in accordance with the College Statutes, I have the honour of submitting to Your Majesty the following Report of the Proceedings and of the Condition of Queen's College, Cork, for the Academic Session, 1874-75.

The first part of my task is a sad one, for I have to notify the death, just after the Session ended, of the oldest member of our Corporation, John Ryall, LL.D., who was Vice-President of this College from its foundation, and who, during the twenty-six Sessions it has been opened, occupied with great credit the chair of Greek. By his death our College loses the services of an accurate scholar, and an able and conscientious teacher, whose love for his work, and high personal character exerted a lasting influence upon the Students.

The Professor of Materia Medica, Dr. Purcell O'Leary, having been unable through illness to lecture, the Council appointed as his substitute, Matthias O'Keeffe, M.A., M.D., who performed the duties of the chair very efficiently.

There being no endowed chair of Medical Jurisprudence in this College, the Council has hitherto provided for the want of one by appointing the Professor of English Law to give a short course on the legal part of the subject, and one of the Professors of the Medical Faculty to lecture on the medical part. For the last few years, the latter part of the course had been given by the Professor of Materia Medica; but as he was unable last Session to undertake to do so, the Council appointed his substitute, Dr. O'Keeffe, Lecturer on Medical Jurisprudence, who performed the duties of the office to our entire satisfaction.

1. MATRICULATION EXAMINATION, TOTAL NUMBER OF STUDENTS; AND THEIR CLASSIFICATION ACCORDING TO ACADEMIC STANDING AND FACULTIES.

The General Matriculation or Examination for Entrance, was held on Tuesday, the 20th of October, and following days; and a supplementary Examination on the 16th of November. The subjects of examination prescribed by the Council of the College, and printed in the College Calendar, will be found in Appendix A, No. I, p. 19, annexed to this Report. Of the Candidates who presented themselves for examination 59 passed; of whom 48 attended the lectures of the Session, and 11, from various causes, did not. Among the causes may be enumerated illness, age, &c. Most, if not all, the Students thus Matriculated in one year, but who do not attend the lectures of that year, do so the following year.

There also entered for the first time 18 Non-Matriculated Students, making the total number of new Students 77.

The total number of Matriculated Students registered and who paid fees for the Session was 227, and of Non-Matriculated 23, or together 250.

The following table shows the classification of the Matriculated Students attending the College, according to Academic Standing:—

Students of the First Year,	79
,, ,, Second ,,	60
,, ,, Third ,,	58
,, ,, Fourth ,,	30
Total,	227
Non-Matriculated,	23
Total Students,	250

The distribution of all the Students attending the College during the Session 1874–75, among the several Faculties, is shown in the following table:—

	Matriculated Students.	Non-Matriculated Students.	Total.
Faculty of Arts,	54	4	58
,, Law,	6	1	7
,, Medicine,	156	18	174
School of Engineering,	23	–	23
Total,	239	23	262

As 12 of the Matriculated Students attended lectures in two Faculties, that number must be deducted from the numbers 239 and 262 respectively in the preceding table to obtain the true number of individual Students.

The following table in which the Matriculated Students in each Faculty are classified according to Academic Standing will give a still better idea of the working of the College:—

	Number of Students attending the course of the				
	First Year.	Second Year.	Third Year.	Fourth Year.	Total.
Faculty of Arts,	16	14	14	10	54
,, Law,	3	1	1	1	6
,, Medicine,	50	44	42	20	156
School of Engineering,	12	3	8	–	23
Gross Total,	81	62	65	31	239
From which are to be deducted Number of Students attending Lectures of another Year also,	2	2	7	1	12
True Total,	79	60	58	30	227

2. COMPARISON OF THE NUMBER OF STUDENTS ATTENDING THE COLLEGE DURING THE PAST SESSION WITH THE NUMBER IN EACH OF THE LAST FOUR SESSIONS RESPECTIVELY.

Subject to the small fluctuations which must necessarily take place in the relative number of Students who in each year adopt either the profession of Law, Medicine, or Engineering, the number of Students attending this College during each of the last five years has remained remarkably constant. The following table shows the number in each of those years, classified according to Academic Standing.

	Session of				
	1870-71.	1871-72.	1872-73.	1873-74.	1874-75.
Matriculated Students—					
Of the First Year, .	89	90	106	77	79
,, Second ,, .	57	47	61	68	60
,, Third ,, .	39	52	36	52	58
,, Fourth ,, .	35	27	26	31	30
Attending Special Courses,	5	14	3	–	–
Total, . . .	225	230	232	228	227
Non-Matriculated Students, .	25	23	20	22	23
Total Number of Students,	250	253	252	250	250

The following table in which the Students attending the College during the last five years are classified according to Faculties, will show the extent of the fluctuation in the relative number of Students of Law, Medicine, and Engineering above alluded to:—

	Total Number of Students in the Session				
	1870-71.	1871-72.	1872-73.	1873-74.	1874-75.
Faculty of Arts, . .	50	56	49	64	58
,, Law, . .	11	12	12	7	7
,, Medicine, .	167	173	174	170	174
School of Engineering, .	30	25	22	19	23
Gross Total, . . .	258	266	257	260	262
Deduct Number of Students attending Lectures in two Faculties, . . .	8	13	5	10	12
True Total, . .	250	253	252	250	250

3. AGES OF STUDENTS.

Of the new Students 79·6 per cent. were 17 years of age or upwards, and 20·3 per cent. under the age of 17 years. Taking all the Matriculated Students of the College for the Session 1874–5, 91·1 per cent. were 17 years of age and upwards, and only 8·8 per cent. under 17 years.

4. SCHOLARSHIPS, EXHIBITIONS, AND PRIZES AT ENTRANCE.

The examinations for Scholarships were held on Thursday, the 22nd of October, 1874, and on the other days given in the table in the Appendix (A, No. I., p. 23). The subjects of examination prescribed by the Council, and published in the College Calendar, as well as the conditions under which the Scholarships are held will also be found in the Appendix (A, No. I., p. 22; No. II., p. 32, &c.; No. III., p. 37; No. IV., p. 41; and No. V., p. 45). These examinations were conducted chiefly by printed papers, copies of which will be found in Appendix D. Of the 46 Junior Scholarships at the disposal of the Council, 10 in the Faculty of Arts, open to Students of the second year, are tenable for two years, so that in reality there are only 20 Junior Scholarships in Arts, or 36 in all the Faculties at the disposal of the Council every year. Of these 26 were awarded, or adding the Scholarships awarded the previous year, and tenable for two years, 36. Of the 8 Senior Scholarships 6 were awarded.

The following table shows the distribution of those Scholarships according to Faculties:—

Faculties.	Total No. of Scholarships.	No. of Scholarships awarded.
Faculty of Arts—		
Junior Scholarships—		
Open to Students of the First Year, .	10	4
Open to Students of the Second Year,	10	9
Held by Students of the Third Year, but awarded in the previous Session,	10	10
Total, ...	30	23
Senior Scholarships, ...	7	6
Faculty of Law—		
Junior Scholarships, ...	3	1
Senior "	1	–
Faculty of Medicine, ...	8	8
School of Engineering, ...	5	4
Total, ...	54	42

Four Exhibitions were awarded to unsuccessful Candidates for Senior Scholarships whose answering was deemed worthy of a special prize, namely, one in ancient classics, one in modern languages, one in chemistry, and one in mental and economical science. Owing to want of funds available last Session for this purpose only seven Exhibitions were awarded to unsuccessful Candidates for Medical Scholarships, though the general answering of most of the Candidates was very good.

The small number of Scholarships awarded at Entrance is due to the very imperfect preparation of the Candidates. Indeed one of the chief difficulties which the College has to contend with is the want of good intermediate schools in which boys would be well grounded in the elements of the future College course, and above all taught how to work. It is not too much to say that the greater part of our Students lose much of the first year at College from not knowing how to work, and in endeavouring to make up for the irregular and incomplete education given at most of our schools.

5. LECTURES.

A list of the subjects in which instruction is given in the College, the total number of Students who attended classes in those subjects, and the number of lectures given to them by each Professor will be found in Appendix B, No. X., p. 51. Under the head of each Faculty, detailed information as to the courses of studies, outlines of the lectures given by each Professor, &c., are also given in the Appendix (A, Nos. II., III., IV., and V., pp. 27, *et seq.*, 37, 40, and 44). Each Professor has also furnished a Special Report of his work for the Session. These Reports will be found in the Appendix (C, No. XI., p. 52, *et seq.*)

6. SESSIONAL EXAMINATIONS AND PRIZES.

An Examination in every subject taught in the College is held at the end of the Session, or in the case of those subjects which only occupy one or two terms, at the end of the Course. Students in the Faculties of Arts and Law, and in the School of Engineering are bound to attend such of those Sessional Examinations as belong to their year, otherwise they cannot be promoted in Academic Standing, and must consequently attend the same classes again the following Session. All holders of Junior Scholarships and Exhibitions in any Faculty must pass in every subject of that year, otherwise they forfeit their Scholarships or Exhibitions. Students of the Faculty of Medicine are not, unless holders of Medical Scholarships or Exhibitions, bound to pass Sessional Examinations, and do not require Academic Promotion. They are, however, encouraged to do so, and many do present themselves at the Examinations of their year in order to compete for the Prizes which are awarded by the Council to the best answerers at these Sessional Examinations when specially recommended by the Professors.

The Sessional Examinations are conducted chiefly by printed papers; but where necessary the Students are examined orally also; and in the case of the physical and natural sciences practical demonstrations are added wherever it can be conveniently done. Copies of the papers set at these examinations will be found in the Appendix (D, No. XIV., p. 64, *et seq.*)

The names of the Students to whom Prizes were awarded at the last Sessional Examinations will be found in the Appendix (B, No. VIII., p. 49).

The following table contains the results of the Sessional Examinations as regards the Academic Promotion of Matriculated Students in the Faculties of Arts and Law, and in the School of Engineering for the Session 1874–75:—

	Number of Fourth Year's Students not requiring Promotion.	Number of Students who did not attend any or a sufficient number of Lectures.	Number of Students who having attended the requisite number of Lectures were—		Total.
			Promoted.	Not Promoted.	
Faculty of Arts, . .	10	4	24	16	54
,, Law, . .	1	–	4	1	6
School of Engineering,	–	2	15	6	23
Total, . . .	11	6	43	23	83
Medical Students not requiring Promotion, ...					156
Total, ...					239
Deduct number of Students attending Lectures in two Faculties,					12
Total number of Students for the Session, 1874–75, ...					227

Supplemental Examinations are usually granted to those Students who fail to pass in one subject only. The number of Students not promoted as given in the preceding table, will consequently be largely diminished before the commencement of next Session. The comparatively large number who fail to pass the Sessional Examinations of the first year is chiefly due to the cause I have already alluded to in speaking of Scholarships —the irregular and imperfect training of our schools, which does not fit them for University work.

7. UNIVERSITY EXAMINATIONS.

The following table gives the number of Students of Queen's College, Cork, who passed the examinations of their Standing and Faculty respectively, and obtained Degrees, &c., at the June and October commencements of the Queen's University in Ireland for the year 1874:—

	M.A.	B.A.	First Examination.		
Faculty of Arts,	1	6	12		
	LL.B.	Diploma in Elementary Law.			
Faculty of Law,	1	1			
	M.D.	M.Ch.	Diploma in Midwifery.	Second Examination.	First Examination.
Faculty of Medicine,	19	19	18	34	27
	B.E.	First Examination.			
School of Engineering,	2	6			

The Master of Arts obtained first class honours. Of the Bachelors in Arts, one obtained second class honours, two were classed in the Upper Pass Division; and three were unclassed. Of those who passed their First Examination in Arts, two obtained second class honours, five were classed in the Upper Pass Division, and five were unclassed.

The Diploma in Elementary Law was obtained with second class honours.

Of the Doctors in Medicine one obtained first class honours, and eighteen were unclassed. Of those who passed the Second University Examination in Medicine, two obtained first class honours, four were classed in the Upper Pass Division, and twenty-eight were unclassed. Of those who passed the First University Examination in Medicine, one obtained second class honours, two were classed in the Upper Pass Division, and twenty-four were unclassed. The number of Students of Medicine who obtain honours or classification at their University Examinations does not represent the number who might be capable of winning them; for the June Examinations which are attended by a considerable number of Medical Students anxious to get their Diplomas with a view of beginning their professional life as soon as possible, are only Pass Examinations.

The following Students of this College obtained University Exhibitions at the last October Commencements: Mr. John J. Welply, the Exhibition of £20 a year for two years, as best answerer absolutely of his class, at the Second Examination in Medicine; and Mr. Daniel Connery, the Second Exhibition of

£15 a year for two years, given at the First Examination in Engineering.

8. DISCIPLINE AND CONDUCT OF THE STUDENTS.

No breach of discipline or case of misconduct of sufficient gravity to call for the interference of the Council occurred during the Session. The Professors state in their special reports (Appendix C, No. XI., p. 52, *et seq.*) that the conduct of the Students in the lecture-room was good. Indeed only two fines for breaches of discipline at lecture were imposed during the whole Session.

As I have stated in my last report, I can only report officially on the conduct of the Students while in the College, because there are no Halls or Licensed Boarding Houses, over which the Statutes would give me authority. After the experience of a second Session I can say with pleasure, that it would be difficult to find a body of young men so well conducted as are the Students of this College within its precincts. So far as I can learn their conduct has not been different outside its walls.

The Licensed Boarding House system has entirely failed here as it has done elsewhere. This might have been foreseen, for unless the house was specially built for the purpose, and for the accommodation of a large number of Students, it would not pay any one for the risk, and trouble which the working of a Licensed Boarding House must necessarily entail. On the other hand, Students found the accommodation in such houses as were opened inferior, and less adapted for study than that which they could get for themselves in ordinary lodgings, at the same time that the total expense of living was higher than many Students could afford.

But although the present system meets on the whole the means of the great majority of Students, there can be no doubt that the erection of one or more Halls in the immediate neighbourhood of the College, would greatly promote the welfare of the College. The establishment of such Halls formed part of the original plan of the Queen's Colleges, but the erection of the necessary buildings was left to local enterprise. A clause was, however, inserted in the Act of Parliament founding the colleges, enabling the Commissioners of Public Works in Ireland, to make loans under certain conditions for the purposes. But in a country which in the course of three quarters of a century has had to do what in other countries has been the work of centuries—to found and organize nearly all its religious, educational, and charitable institutions, more pressing wants and objects with which a larger number of persons sympathize than with improving the provision for University Education, would naturally deserve more attention and support than a project for the erection of Collegiate Halls, even if the peculiar circumstances under which the Queen's Colleges were established did not for a time shut out all hopes of local aid. No step has consequently been ever taken to carry out this part of the College scheme. As a Collegiate Hall would be self-supporting once the necessary buildings were provided, and as these would not cost a very large sum, it is to be hoped that ere long a beginning may be made in the establishment of one.

9. RELIGIOUS DENOMINATIONS OF STUDENTS.

The following table shows the number of new Students belonging to the several religious denominations, who entered the College in the Session of 1874–75:—

	Matriculated Students.	Non-Matriculated.	Total.
Roman Catholics, . . .	28	12	40
Episcopal. Protestants, .	17	6	23
Presbyterians, . . .	1	–	1
Other Denominations, . .	6	–	6
Unknown, ...	7	–	7
	59	18	77

The following table shows the total number of Students on the College Register for the Session of 1874–75, belonging to the several religious denominations classified according to Faculties:—

Faculty.	Roman Catholics.			Episcopal. Protestants.			Presbyterians.	Other Denominations.	Unknown.	Total.		Gross Total.
	Matr.	Non-Matr.	Total.	Matr.	Non-Matr.	Total.	Matr.	Matr.	Matr.	Matr.	Non-Matr.	
Faculty of Arts, . .	22	2	24	22	2	24	5	2	3	54	4	58
„ Law, . .	4	1	5	1	–	1	1	–	–	6	1	7
„ Medicine, .	89	10	99	57	8	65	2	5	3	156	18	174
School of Engineering, .	7	–	7	12	–	12	–	3	1	23	–	23
Gross Total, . .	122	13	135	92	10	102	8	10	7	239	23	262
Deduct No. of Students attending two Faculties,	6	–	6	6	–	6	–	–	–	12	–	12
Total, . . .	116	13	129	86	10	96	8	10	7	227	23	250

The following table shows the total number of Students last Session belonging to the several religious denominations, classified according to Academic Standing:—

	First Year.	Second Year.	Third Year.	Fourth Year.	Non-Matriculated.	Total.
Roman Catholics, .	37	38	29	12	13	129
Episcopal. Protestants, .	26	21	27	12	10	96
Presbyterians, . . .	1	–	1	6	–	8
Other Denominations, .	8	1	1	–	–	10
Unknown, ...	7	–	–	–	–	7
	79	60	58	30	23	250

The following table gives the number of Scholars and Exhibitioners belonging to the several religious denominations according to Faculties:—

	Roman Catholics.		Episcopal. Protestants.		Presbyterians.	Other Denominations.	Total.
	Scholarships.	Exhibitions.	Scholarships.	Exhibitions.	Scholarships.	Scholarships.	
Faculty of Arts, . . .	12	2	12	2	4	–	32
„ Law, . . .	1	–	–	–	–	–	1
„ Medicine, .	3	3	4	4	–	1	15
School of Engineering, . .	1	–	2	–	–	1	4
	17	5	18	6	4	2	52
Total, . . .	22		24				

The following table gives the total number of matriculated Students and of non-matriculated Students attending the College during each of the last five years, classified according to religious denominations:—

Religious Denominations.	1870–71.			1871–72.			1872–73.			1873–74.			1874–75.		
	Matriculated.	Non-Matriculated.	Total.	Matriculated.	Non-Matriculated.	Total.	Matriculated.	Non-Matriculated.	Total.	Matriculated.	Non-Matriculated.	Total.	Matriculated.	Non-Matriculated.	Total.
Roman Catholics,	79	7	86	96	8	104	98	9	107	111	12	123	116	13	129
Episcopal. Protestants, ...	125	17	142	118	13	131	119	11	130	108	8	116	86	10	96
Presbyterians, .	12	–	12	10	–	10	8	–	8	7	2	9	8	–	8
Other Denominations, . . .	9	1	10	6	2	8	5	–	5	2	–	2	10	–	10
Unknown, . .	–	–	–	–	–	–	2	–	2	–	–	–	7	–	7
Total, . .	225	25	250	230	23	253	232	20	252	228	22	250	227	23	250

10. RECEIPTS AND EXPENDITURE OF THE COLLEGE.

The Bursar's Annual Abstract of the Receipts and Expenditure of the College for the year ending the 31st March, 1875, and his account of the manner in which the Annual Parliamentary Grant for the maintenance of the College, and the College fees and fines for the year referred to have been expended, will be found in the Appendix (C, No. XIII., p. 63). These accounts have been certified as correct by the Auditor-General.

In my Report for the Session of 1873–74, I stated that with a view of making the College funds more secure, and at the same time increasing the income of the College, the Council had invested, with the sanction of His Grace the Lord Lieutenant, £1,000 of the unexpended balances from the College endowment for salaries and scholarships, in New Three per Cent. Stock. The first half-yearly dividend from this investment appears in the Bursar's Abstract among our Receipts for last year.

11. LIBRARY.

The special Report of the Librarian will be found in the Appendix (C, No. XII., p. 62).

The additions made to the Library consisted chiefly of the current volumes of literary and scientific journals, and other periodical publications. I trust that Parliament may see fit to restore our annual grant this year to the amount at which it was fixed before the year 1863, and thus enable us to make our Library what it should be.

12. PHYSICAL CABINET, LABORATORIES, &C.

Provision having been made by Your Majesty's Government in the Parliamentary Estimates of this Session for the construction of the small Physical Laboratory, the want of which I represented in my last Report, and there being a prospect of an increase in the amount of the annual grant for the working of the College, the Professor of Natural Philosophy will, I trust, be soon in a position to put his department in thorough working order.

The Chemical Laboratory being now too small to accommodate the number of Students, the Professor of Chemistry is obliged to divide them into two classes; this not only increases the labour of the Professor, but interferes with the work of the Students, especially of those who propose to devote themselves particularly to Chemistry.

Provision having been also made in this year's Parliamentary Estimates for building a preparation room for the Professor of Natural History in connexion with the Museum, his department will be in a much better position for work than it has hitherto been.

The room at present used as a laboratory or preparation room, by the Professor of Materia Medica and Lecturer on Medical Jurisprudence, is very unfit for the purpose. If enlarged, it would answer very well until suitable permanent provision can be made for both departments in the room now used as a temporary Anatomical Museum; and when a permanent museum building shall have been provided, the room enlarged as proposed would serve as a Physiological Laboratory, the want of which I represented last year. Should Parliament sanction this year an increase of our annual grant, the Council will be in a position to supply the other wants of the department of Materia Medica referred to in the Report of the Acting Professor (Appendix C, No. XI., p. 59). This will also be the case with the wants referred to in the special Reports of the Professors of Midwifery and of Surgery (Appendix, pp. 59, 60).

The Professor of Anatomy reports (Appendix, p. 59) that the Dissecting Room does not afford adequate accommodation for the number of Students now engaged in Practical Anatomy. I have already had the honour of representing to Your Majesty this want in my Report for last Session in connexion with the subject of additional collegiate buildings.

13. MUSEUMS.

I beg to again represent the unsatisfactory character of the rooms set apart for Museums for this purpose, and especially the total unfitness of that at present used as an Anatomical and Pathological Museum, and the necessity of providing next year, if possible, a proper building. Should Your Majesty's Government think fit to make provision for this pressing want in next year's Parliamentary Estimates, I trust the new Anatomical Museum may be so constructed as to enter into the general plan of the additional collegiate buildings asked for last year, and so at the same time provide for the enlargement of the Dissecting Room, and the accommodation of the Materia Medica department.

I beg also to again represent the want of a Curator for our collections. The want of pathological specimens referred to by the Professor of Medicine (Appendix, p. 60), is as much due to the absence of such an officer, as to the want of a proper museum building.

14. COLLEGE GROUNDS AND BOTANIC GARDEN.

The want of an entrance to the College nearer to the city, and free from the objections to which the existing ones are open, is very much felt. I take this opportunity to again earnestly recommend the purchase of some adjacent land, so as to protect the College from many grave existing inconveniences, and many far more serious ones with which we are threatened.

The want of a glass-house for tropical and sub-tropical plants, from which the Professors of Natural History and Materia Medica could procure illustrations for their lectures, and which would furnish the Students with typical examples of the flora of warm regions, has been already represented by my predecessor and by myself. I hope some steps will be taken to provide one next year.

15. COLLEGE FELLOWSHIPS.

I beg to repeat what I stated in my last Report, as to the benefits which would be conferred directly on this College, and indirectly on the higher education and intellectual culture of the south of Ireland, by the foundation of a few Fellowships tenable for a limited number of years.

16. SALARIES OF PROFESSORS, &C.

As every one admits that the salaries of the Professors, Officers, and Servants of this College and the other Queen's Colleges in Ireland, were originally fixed on too low a scale, and are now wholly inadequate, they were sanguine that something would have been done during this Session of Parliament, to increase the endowment of the Colleges. In this, however, they have been unhappily disappointed. I trust that the question will again engage the early attention of Your Majesty's Government, and that in the interest of education they may be able to recommend to Parliament next Session, a measure to satisfy their just claims, and to put this College in every way it may require in a position to do its work efficiently and thoroughly.

17. TECHNICAL EDUCATION AND THE RE-ESTABLISHMENT OF THE CHAIR OF AGRICULTURE.

Perhaps I ought not to conclude this Report without alluding to a subject of considerable importance which has been directly brought under my notice, the re-establishment of the Chair of Agriculture in this College.

When this College was founded, the value of special scientific training for those who proposed to become agriculturists, manufacturers, or merchants was so little understood, even in the great centres of industry, and the circumstances of Ireland were at the time so unfavourable for any educational experiment, that it was not likely the Chair of Agriculture founded in this College, would at once be so successful as to overcome the objections of the opponents of any change in the old system of higher education. After a few years of an existence, by no means unsuccessful under the circumstances, the Chair for economical reasons was allowed to lapse on the death of the first Professor, no one saying a word against its abolition. Nothing could show the growing belief in the value of scientific knowledge as a preparation for the successful pursuit of industry than the fact of the tenant-farmers of the south of Ireland, desiring the re-establishment of this Chair. Several Farmers' Clubs discussed the subject, among which I may specially mention those of Cork and Mallow, which memorialled Your Majesty's Irish Government to restore the Chair. The landed proprietors of this county, too, appear to be desirous of its re-establishment, for the Grand Jury of the County of Cork at the spring assizes, unanimously resolved to ask the Government to do so.

This movement about the chair of agriculture suggests the desirability of considering whether, without at all interfering with the existing work of the School of Engineering, the basis of the school itself might not be widened so as to provide scientific instruction for three new classes of Students. 1. Those proposing to direct mechanical branches of trade, such as metal founding, construction of machines, milling, flax and wool spinning, ship building, paper making, &c.; 2. Those proposing to engage in chemical manufactures, such as brewing, distilling, sugar making, soap making, tobacco manufacture, powder manufacture, manufacture of pharmaceutical preparations, manures, and other chemical products, &c.; and 3. Those proposing to devote themselves to agriculture, and veterinary medicine. We possess already chairs in all the fundamental sciences, mathematics, physics, chemistry. anatomy, natural history, and mineralogy, and geology, so that at a very moderate expense provision could be made in this college for a very complete system of technical education for the south of Ireland. At present anyone may attend any of the courses of lectures given in the college as a non-matriculated student, and so far provision is already made to a certain extent for those requiring instruction in science. But what is really required is that kind of regular systematic training in a definite course of study specially adapted for the three classes of students just named—mechanical engineers, chemical manufacturers, and agriculturists—which is already given in this college to students in engineering, and which has already gained for it a deservedly high character in this department.

This proposed development of the college so far from interfering with its present work would rather strengthen and increase it, and be in accordance with the general tendency of enlightened opinion on the development of University education, which is that the higher technical education should be given in existing Universities rather than by the creation of special schools.

I beg to subscribe myself, Your Majesty's

Most dutiful servant,

WILLIAM K. SULLIVAN,

President.

QUEEN'S COLLEGE, CORK.
18*th July*, 1875.

APPENDIX.

APPENDIX A.

No. I.

Appendix A.

No. I. General Regulations of College, &c.

ESTABLISHMENT of the COLLEGE and UNIVERSITY. COLLEGIATE STAFF. GENERAL REGULATIONS of the COLLEGE. STUDENTS: MATRICULATION, RESIDENCES, FEES, LECTURE HOURS, SCHOLARSHIPS, EXHIBITIONS, PRIZES, DEGREES.

QUEEN'S UNIVERSITY IN IRELAND—QUEEN'S COLLEGE, CORK.

ESTABLISHMENT OF THE COLLEGE AND UNIVERSITY.

The COLLEGE is a Corporation under the name and style of "THE PRESIDENT and PROFESSORS of QUEEN'S COLLEGE, CORK." It was founded under the provisions of the Act 8 & 9 Victoria, cap. 66, intituled "An Act to enable Her Majesty to endow new Colleges for the Advancement of Learning in Ireland." Under the powers given by this Act the three colleges of Belfast, Cork, and Galway were incorporated on the 30th day of December, 1845. The Statutes were drawn up, and the system of education to be pursued in them arranged by a Board called the "Board of Queen's Colleges," consisting of the Presidents and Vice-Presidents of the three colleges. The Professors were appointed on the 4th of August, 1849, and on the 30th of October of the same year the Colleges were opened for the reception of students. Letters Patent constituting the Statutes were issued on the 11th of December, 1849, and a further Charter was issued in the year 1863.

The UNIVERSITY was founded in 1850 under the name and style of the "QUEEN'S UNIVERSITY IN IRELAND," and its charter provides that the senate should have power to confer upon the students of the Queen's Colleges of Belfast, Cork, and Galway such degrees and distinctions in the Faculties of Arts, Law, and Physic, as are granted and conferred in other Colleges and Universities of Great Britain and Ireland. The Charter further ordains that any of the Students of the three Queen's Colleges who shall have obtained such Degrees in any of the several Faculties of Arts, Medicine, and Law as shall be conferred by the Chancellor and Senate of the Queen's University, shall be fully possessed of all such rights, privileges, and immunities, as belong to similar Degrees granted by other Universities or Colleges, and shall be entitled to whatever rank and precedence is derived from similar Degrees granted by other Universities.

The Professors of the three Queen's Colleges are entitled to style themselves "Professors of the Queen's University."

Appendix A.

No. I.
General Regulations of College, &c.

Collegiate Staff.

President—William K. Sullivan, ph.d., m.r.i.a.

Vice-President—John Ryall, ll.d.

Professors.

The Greek Language,	John Ryall, ll.d.
The Latin Language,	Bunnell Lewis, m.a., f.s.a.
Mathematics,	Charles Niven, m.a., Fellow of Trin. Coll., Camb.
Natural Philosophy,	John England, m.a.
History and English Literature,	George F. Armstrong, m.a.
Logic and Metaphysics,	George Sidney Read, m.a.
Chemistry,	Maxwell Simpson, b.a., m.d., f.r.s.
Natural History,	Joseph Reay Greene, b.a., m.d., m.r.i.a.
Geology and Mineralogy,	Robert Harkness, f.r.ss.l. & e., f.g.s.
Modern Languages,	Raymond de Vericour, m.a.
Jurisprudence & Political Economy,	Richard Horner Mills, m.a.
English Law,	Mark S. O'Shaughnessy, m.r.i.a., f.r.s.l.
Anatomy and Physiology,	J. Henry Corbett, m.d., l.r.c.s.i.
Medicine,	Denis C. O'Connor, b.a., m.d.
Surgery,	Wm. K. Tanner, m.d., f. & l.r.c.s.i.
Materia Medica,	Purcell O'Leary, b. ès. l., m.a., m.d., f.b.s.
Midwifery,	Joshua R. Harvey, b.a., m.d.
Engineering,	Alexander Jack, m.a.

Lecturers.

Medical Jurisprudence,	Mark O'Shaughnessy, m.r.i.a., f.r.s.l. Matthias O'Keeffe, m.a., m.d.

Council of the College.

The President.
„ Vice-President.
Professor Niven.
„ Armstrong.
„ Tanner.
„ Harvey.
„ Jack.
„ Simpson.

Officers.

Registrar,	Robert John Kenny, Esq.
Bursar,	John England, m.a.
Librarian,	Matthias O'Keeffe, m.a., m.d.

General Regulations.

The College Session, 1874–75.—The *First Term* commenced on the 20th of October, 1874, and ended on the 19th of December.

The *Second Term* commenced on the 4th of January, 1875, and ended on the 20th of March.

The *Third Term* commenced on the 5th of April, 1875, and ended with the Session, on the 13th of June.

N.B.—The Easter Recess for the Medical Faculty commenced on the Tuesday before Easter, and ended on Easter Monday.

Library and Museum.—The Library is open daily to Students between the hours of 9 a.m. and 4 p.m., except on Saturdays, when it is closed at 1 o'clock.

The Museum is open daily between the hours of 9 a.m. and 3 p.m., except on Saturdays, when it is closed at 12 o'clock.

STUDENTS.

The Students of the College are either Matriculated or Non-Matriculated.

MATRICULATED STUDENTS.—To become a *Matriculated Student*, it is necessary to pass the General Matriculation Examination which commenced in the Session of 1874–75, on Tuesday, the 20th of October, 1874.

The following are the Subjects in which Candidates are examined:—

For the Faculties of Arts, Medicine, and Law.

Greek:

Grammar.

Any one of the following Authors which the Candidate may select:—

Homer—Iliad, Books I. and II.
Xenophon—Anabasis, Books I. and II.
Lucian—Walker's Selections.

Latin:

Any one of the following Authors which the Candidate may select:—

Virgil—Æneid, Books I. and II.
Sallust—Conspiracy of Catiline.
Cæsar—Gallic War, Book I.

History:

Outlines of Grecian History.
Outlines of Roman History.

Geography:
Outlines of Ancient and Modern Geography.

English:

Grammar—

(1.) The principles of Etymology and Orthography.
(2.) The leading Rules of Syntax.

Composition, and writing from dictation.

Mathematics:

Arithmetic—Principles of Notation. Vulgar and Decimal Fractions. Definition of the terms Ratio and Proportion. The Rule of Proportion, with its commercial applications, including Simple Interest.

Algebra—Explanation of the signs and meaning of an Index. Calculation of the values of Algebraical Expressions, when particular values are given to the letters which they involve.

Euclid—Book I., with the definitions and axioms.

For the Department of Civil Engineering.

The Outlines of Modern Geography.

Grammar.

Mathematics:

Arithmetic—Principles of Notation. Vulgar and Decimal Fractions, with the reasons of the different rules. Rule of Proportion, with its commercial applications. Extraction of the Square Root, both of whole numbers and decimals.

Algebra—Explanation of the signs and meaning of an Index. Calculation of the value of Algebraic Expressions, when particular values are given to the letters which they involve.

Euclid—Books I., II., III., IV., and VI., with the definitions of Book V.

Candidates for Matriculation are requested to send their names to the Registrar, at least *three days* before the commencement of the Examination, stating at the same time the Faculty or Department which they propose to enter.

Before being admitted to Examination they are required to pay the *College Fees* for the year, amounting to Ten Shillings for each Faculty or Department. These will be returned, on application, to such as fail to pass the Examination.

No Student will receive a Certificate of Matriculation until he has paid the whole of the *Class Fees* for the Session.

B 2

Appendix A.

No. I.
General Regulations of College, &c.

NON-MATRICULATED STUDENTS.—Those who desire to attend any of the Lectures in the College may do so, without matriculating, or passing any of the College Examinations, on paying the Fees for those Lectures, together with a College Fee of Five Shillings.

They are entitled to the use of the Library, on subscribing the Library Regulations, and paying a further fee of Fifteen Shillings.

They are not eligible for Scholarships or Prizes, and do not enjoy any of the other privileges of Matriculated Students; but the Professors may recommend the Council to grant Certificates of Honour to the most distinguished.

STUDENTS FROM OTHER COLLEGES.—Students who have pursued part of their studies in one of the Queen's Colleges, or in any University capable of granting Degrees in the Faculties of Arts, Law, and Medicine, are permitted, on producing testimonials of their College standing and conduct, to take corresponding rank in this College, and to compete for Scholarships of the corresponding year; provided that they shall not hold at the same time a Scholarship, or any other office of emolument, in any other University or College.

RESIDENCES.

There is no accommodation for the residence of students within the College, but it is provided by the Statutes that every Matriculated Student, being under the age of Twenty-one Years, shall reside, during the College Terms, with his parent or guardian, or with some relation or friend, to whose care he shall have been committed by his parent or guardian, or in one of the Boarding-houses licensed by the President of the College and arranged for the reception of students, who are then placed under the moral care and spiritual charge of the Deans of Residences of their respective creeds.

The Terms for Board and Lodging are generally at the rate of from £30 to £40 a year.

The following are the Protestant Deans of Residences:—

Church of Ireland, . . .	Rev. George Webster, D.D.
General Assembly of the Presbyterian Church in Ireland, . . .	Rev. William Magill.
Wesleyan Methodists, . . .	Rev. William G. Price.
Non-Subscribing Presbyterian, . .	Rev. W. Whitelegge, M.A.

The Deans are designated as they wish themselves to be called.

FEES.

The Fees paid by Students are of two kinds: Collegiate Fees and Class Fees. The following are the regulations concerning the payment of Fees:

1. All Fees are to be paid to the Bursar, at his Office in the College.'
2. Candidates for Matriculation are required to pay their *College Fees* before being admitted to Examination.
3. Students must pay their Class Fees before being admitted to the Classes; and if Candidates for Scholarships, must do so on or before the day previous to the date of Examination.
4. Half the Class Fees are returned to Scholars; but this rule does not extend to Exhibitioners.

COLLEGIATE FEES.—For the First Year the College Fees are *Ten Shillings;* for the Second and subsequent years Five Shillings. Students who wish to borrow books from the Library are obliged to *deposit* One Pound with the Bursar.

CLASS FEES.—The ordinary fee paid for a course of Lectures is £2. For English and Logic the fee is only £1. For Practical Anatomy, Practical Chemistry, and the first course of Anatomy and Physiology, the fee is £3.

With reference to the Fee payable for repeated attendance on the same Course of Lectures, the following rule has been laid down in the Statutes:—

The Fees payable by Students, whether Matriculated or Non-matriculated, to the several Professors, for attendance on the several Pass Courses of Lectures or instruction, which are now or may be hereafter prescribed by the College Council, for any Degree or other University distinction, shall be £1 for each

Course extending over one Term only, and £2 for each Course extending over more than one Term of a Session, when attended for the first time, and £1 for each re-attendance on the same; except that the Fee payable for the Course of Anatomy and Physiology shall be £3 when attended for the first time, and £2 for every subsequent attendance; except also, that the Fee payable for Practical Anatomy or Practical Chemistry, shall be £3 for each attendance.

Appendix A.

No. I.
General Regulations of College, &c.

In the case of Students receiving special instructions, not prescribed as a qualification for a Degree or other University distinction, or attending Honor Courses of Lectures, the Council shall have power to fix the amount of the Fee to be paid by each Student; provided that the Fee to be paid for any Honor Course of Lectures which Students are entitled to substitute for a prescribed Pass Course, shall in no case be less than £2.

LECTURE HOURS.

Table of the Subjects and Hours of Lecture.

Name of the Class.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
Senior Greek,	9	9	10	–	9	–
Junior Greek,	10	–	9	9	10	–
Extra Greek,	–	10	–	10	–	–
Senior Latin,	10	–	9	–	10	–
Junior Latin,	9	10	10	10	–	–
Extra Latin,	–	11	–	11	–	–
English Language,	–	11	–	11	–	10
English Literature,	–	12	–	12	–	11
History,	12	–	12	–	12	–
Medical French,	12	–	12	–	12	–
Senior French (*Arts and Engineering*),	1	–	1	–	1	–
Junior French (*Arts and Engineering*),	2	–	2	–	2	–
German or Italian,	–	2	–	2	–	2
Logic,	–	11	–	11	–	9
Metaphysics,	–	1	–	1	–	10
Political Economy and Jurisprudence,	–	11	11	11	11	–
Senior Mathematics,	1	–	1	–	1	–
Junior Mathematics,	12	–	12	–	12	–
Third Year's Mathematics,	2	–	2	–	2	–
Mathematical Physics,	–	–	12	–	12	–
Mathematical Physics (*Engineering*),	2	–	1	–	2	–
Experimental Physics, Senior,	11	–	11	–	11	–
Experimental Physics, Junior,	–	11	–	11	–	–
Engineering Physics,	–	2	–	2	–	–
Physics (Honor),	–	12	–	12	–	–
Chemistry,	11	–	11	–	11	–
Practical Chemistry,*	2	–	2	–	2	–
Zoology and Botany,	3	–	3	–	3	–
Geology and Mineralogy,	–	2	–	2	–	12
Senior Engineering,	12	–	12	–	12	–
Junior Engineering,	–	10	–	10	–	10
Geometrical Drawing,	10	–	10	–	10	–
Office Work (10 till 2),	–	10	–	10	–	10
Anatomy and Physiology,	1	1	1	1	1	–
Practical Anatomy,	12	12	12	12	12	–
Medicine,	3	–	3	–	3	–
Surgery,	–	4	–	4	–	1
Materia Medica,	–	3	–	3	–	12
Midwifery,	4	–	4	–	4	–
Medical Jurisprudence,	–	12	–	12	–	2
English Law (1st year),	–	11	11	11	11	–
English Law (2nd year),	–	3	3	3	3	–
English Law (3rd year),	–	9	9	9	9	–
English Law (4th year),	–	12	12	12	12	–
Jurisprudence,	–	1	1	1	1	–
Civil Law,	–	4	4	4	4	–
Constitutional and International Law,	–	10	10	10	10	–

* Whenever it becomes necessary to divide the Practical Chemistry Class, the hours for the Second Class are at two on Tuesday and Thursday, and eleven on Saturday.

COLLEGIATE SCHOLARSHIPS.

There are at the disposal of the Council Forty-six Junior and Eight Senior Scholarships.

The former are held by Students who have not yet taken the Degree of B.A.; the latter by Students who have obtained the Degree of B.A.

Of the Junior Scholarships—

Thirty, of the value of £24 each, are appropriated to the Faculty of Arts. (See p. 33).
Five, ,, ,, £20 ,, ,, School of Engineering. (See p. 46).
Eight, ,, ,, £25 ,, ,, Faculty of Medicine. (See p. 42).
Three, ,, ,, £20 ,, ,, Faculty of Law. (See p. 38).

Of the Senior Scholarships—

Seven, of the value of £40 each, are appropriated to the Faculty of Arts. (See p. 33).
One, ,, ,, £40 ,, ,, Faculty of Law. (See p. 42).

All these Scholarships are tenable for only one year, with the exception of the Scholarships of the Second Year in Arts, which are tenable for two years.

Conditions of Candidature and Tenure.

1. Candidates for Scholarships are required to pay on or before the day previous to the date of Examination, the College and Class Fees for the year in the corresponding Faculty. They must also procure a certificate to that effect from the Bursar, and be prepared to show it on their admission to Examination.

2. Scholarships of any year are tenable by Students who have duly completed the previous part of their Course by attending the requisite Courses of Lectures, and passing the ordinary College and University Examinations.

A Student, as a rule, cannot hold two Scholarships at once; but if he be a Candidate for both the Junior Scholarships in Arts of the same year, and stand first on each list, he may hold both the Scholarships.

4. Half the ordinary Class Fees are returned to Scholars.

5. Scholars must complete their attendance during the Session, pass the Sessional Examinations, and observe such rules as the Council may from time to time enact.

6. In the Faculty of Medicine, Scholars must attend the Classes recommended for their year of study, in the order of the Curriculum.

7. Scholars and Exhibitioners have certain statutory duties; such as taking charge of the Class-rolls, registering the attendance of the Students, assisting the Professors in the maintenance of discipline and good conduct in the Students, and for the general business of the College.

[TABLE.

Appendix A.

No. I.
General Regulations of College, &c.

TABLE OF THE TIMES AND SUBJECTS OF THE SCHOLARSHIP EXAMINATIONS FOR THE SESSION 1874–75.

Examination Days.	From 9 to 12 o'clock.	From 2 to 5 o'clock.
Thursday, October 22nd	Geometrical Drawing. Surveying.	Geology and Mineralogy. Surgery.
Friday, October 23rd, .	Latin. Chemistry.	Mathematics. Practical Chemistry. Midwifery.
Saturday, October 24th,	Modern Languages. Political Economy. Mathematics (Geometry Paper).*	Pathology. Latin.
Monday, October 26th,	Greek. Materia Medica. Therapeutics.	Greek. Zoology and Botany. Practical Anatomy. History and English Lit. (*Senior Scholarship.*)
Tuesday, October 27th,	English Language, History and Geography (1st year). English Language, &c. (*2nd and 3rd year.*) Natural Philosophy.	Anatomy and Physiology. Logic and Metaphysics.
Saturday, Nov. 28th, .	English Law.	Civil Law.

* The University Prizes in Geometry were decided on this paper, which was also taken into account in deciding the first year's Mathematical Scholarships.

COLLEGIATE EXHIBITIONS AND PRIZES.

The Council are authorized to grant in certain cases Exhibitions to Candidates who may have failed to obtain Scholarships at the Scholarship Examination.

In May and June are held General Examinations in the subjects lectured upon during the Session; and Prizes of Books are awarded by the Council to the most distinguished Students in each Class.

UNIVERSITY EXHIBITIONS AND PRIZES.

Exhibitions and Prizes are also given by the Senate of the University to Students, in the Faculties of Arts and Medicine, and in the School of Engineering, who shall most distinguish themselves at the various University Examinations.

FACULTY OF ARTS.—The following are to be competed for immediately after General Matriculation:—

> Two Prizes for English Prose Composition and two for Geometry, given annually by the Senate of the University. The First Prize in each is £3 worth of Books; the second £2 worth of Books.

The subjects of Examination for the University Geometry Prizes are—

The first Four and Sixth Books of Euclid, with Definitions of the Fifth Book, and Geometrical deductions.

These Prizes are open to Students who have just passed the Matriculation Examination for the first time.

Three Exhibitions of £20 a year for three years, three Exhibitions of £15 a year for three years, and two Exhibitions of £10 a year for three years, will be competed for annually in the Faculty of Arts. The three £20 Exhibitions will be awarded to the Candidates who stand foremost in order of merit from each College, at the first University Examination in Arts; and the three £15 Exhibitions to the Candidates who stand second in order of merit from each College: provided that their names appear in the First Class of the Division List at that Examination. Of the two £10 Exhibitions, one will be awarded to the best answerer in Mathematical Science, and the other to the best answerer in the Ancient Classics, at the first University Examination. The £10 Exhibitions are open to the competition of Candidates from all the Colleges, and may be held along with one of the larger Exhibitions.

Each Candidate will be deemed a Student of that College in which he shall have attended the Lectures of the second Session; and no Student will be admitted to the competition who shall have allowed more than one academic year to intervene between the time that he entered upon the studies of the second Session and the time of competition.

The first instalment of each Exhibition will be paid at the time of competition; the second when the Exhibitioner takes the Degree of B.A. in the Queen's University, provided he graduate with honors, and within two academic years; and the third when he takes the Degree of M.A. in the Queen's University, provided he obtain it within three academic years from the time of competition.

University Prizes in Composition, open to the Competition of Graduates and Undergraduates.

Two Prizes for English Prose Composition, one of £10 worth of Books, and the other of £5 worth of Books, have been founded, and are open to the competition of all members of the University who shall not have been graduates for more than three years at the time of competition, and who shall not have already twice obtained one or other of these Prizes.

University Prizes in Composition, open to the Competition of all Undergraduates.

Two Prizes in Composition, one for English Prose, the other for Greek or Latin Prose, and each consisting of £5 worth of Books, have been founded, and are open to the competition of all undergraduates, provided that neither the English nor the Classical Prize be awarded oftener than twice to any Student.

FACULTY OF MEDICINE.—Two exhibitions, one consisting of two instalments of £20 each, and the other of two instalments of £15 each, will be competed for annually in the Faculty of Medicine. These exhibitions will be awarded for proficiency in the non-professional part of the first University Examination in Medicine: the £20 exhibition to the best answerer absolutely, in whichever of the Colleges he may have been educated; and the £15 exhibition to the candidate who is first in order of merit of the competitors from the other two colleges; provided that their names appear in the First Class of the Division List at that examination.

Each Candidate will be deemed a student of that College in which he shall have attended the Lectures of the second session; and no student will be admitted to the competition who shall have allowed more than a year to intervene between the time that he entered on the studies of the second year and the time of competition.

The exhibitions in Medicine will be paid in two equal instalments: one at the time of competition; the other when the exhibitioner takes the Degree of M.D. in the Queen's University, provided that he graduate with honors, and within three academic years from the time of competition.

Prize in Composition, limited to the Competition of Undergraduates in Medicine.

A prize of £5 worth of books has been founded, for a thesis on a subject to be prescribed, and is limited to the competition of the Undergraduates in Medicine who shall not have already twice received the prize.

The subjects on which the competitors for composition prizes are to write, will be announced on or before the first of June in each year; the compositions, with fictitious signatures, are to be sent in to the Secretary of the University, on or before the first of the following September, and the successful competitors will be declared at the next Public Meeting of the University.

SCHOOL OF ENGINEERING.—Two Exhibitions, one of £20 a year for two years, and the other of £15 a year for two years, will be competed for annually in the School of Engineering. These Exhibitions will be awarded at the first University Examination in Engineering: the £20 Exhibition to the best answerer absolutely, in whichever of the Colleges he may have been educated, and the £15 Exhibition to the Candidate who is first in order of merit of the competitors from the other two Colleges: provided that their names appear in the First Class of the Division List at that Examination.

Each Candidate will be deemed a Student of that College in which he shall have attended the Lectures of the second Session; and no Student will be admitted to the competition who shall have allowed more than a year to intervene between the time that he entered on the studies of the second year and the time of competition.

The first instalment of each Exhibition will be paid at the time of competition;

No. I. General Regulations of College, &c.

the other when the Exhibitioner takes the Diploma in Engineering of the Queen's University, provided that he take honors with it, and obtain it within two academic years from the time of competition.

OTHER PRIZES.

The Early English Text Society's Prizes.

With a view to the encouragement of the study of Early English, the Early English Text Society has kindly offered for the competition of the Students of Queen's College, Cork, valuable prizes consisting of the rare works in Early English published under its auspices.

An examination for these prizes was held on the 23rd of April, 1875, and was open to all Matriculated Students of the College who were not Graduates at that date, the following being the course appointed :—

1. Outlines of the History of the English People, to the accession of Henry IV.
2. The History of English Literature, to the death of Chaucer.
3. Outlines of Anglo-Saxon Grammar (Rask recommended).
4. Morris—English Accidence, Caps. III., IV., and V.
5. Chaucer—The Prologue to the Canterbury Tales.

The New Shakspere Society's Prizes.

The New Shakspere Society in order to encourage the study of Shakspere's works, and of the English Drama, has also offered copies of the works published by it as Prizes for competition among Students of the College.

An examination for these prizes was held on the 23rd April, 1875, and was open to all Matriculated Students of the College who were not Graduates at that date. The following was the course appointed:—

1. The Study of the English Drama (in outline).
2. The Literary History of the Elizabethan Age.
3. A critical knowledge of the Merchant of Venice, King John, Macbeth, and Julius Cæsar.

See Appendix E., pp. 124–125, for the Examination Papers set to Candidates for these Prizes at the last Examination.

DEGREES.

The Certificates, Diplomas, and Degrees granted by the Senate of the Queen's University are as follows:—

In the Faculty of Arts—
- The Diploma of Licentiate.
- ,, Degree of Bachelor (B.A.)
- ,, ,, Master (M.A.)

In the Faculty of Law—
- Certificate of the Law Professors.
- The Diploma in Elementary Law.
- ,, Degree of Bachelor (LL.B.)
- ,, ,, Doctor (LL.D.)

In the Faculty of Medicine—
- The Degree of Doctor (M.D.)
- ,, ,, Master in Surgery (M.Ch.)
- ,, Diploma of Midwifery.

In the School of Civil Engineering—
- The Degree of Bachelor (B.E.)

NO. II.—FACULTY OF ARTS.

No. II. Faculty of Arts.

DEGREES.

1. DEGREE OF B.A.*

Students intending to proceed to this degree in the Queen's University must

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* Degrees in Arts, conferred by the Queen's University in Ireland, are recognised by the University of Durham, by St. Bee's College, Whitehaven, and by St. Aidan's College, Birkenhead, in the case of Theological Students preparing for Holy Orders in the Established Church.

His Royal Highness the Commander-in-Chief has approved of Graduates of the Queen's University being in future exempted from the usual Examination for direct Commissions; and also of the First University Examination being accepted in lieu of that for the Royal Military College, Sandhurst.

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matriculate in one of the Queen's Colleges, and complete the course of study prescribed by the University Senate, by attending the College Lectures in each Session, and passing the Sessional Examinations.

The B.A. Examination takes place in the September after the close of the third Session, and Candidates must have previously passed the "First Examination in Arts," a preliminary examination which takes place at the commencement of the Third Session.

Course for the Degree of Bachelor in Arts.

Candidates for the Degree of Bachelor in Arts are required—

1. To have been admitted Matriculated Students of the Queen's University in the Faculty of Arts.
2. To have subsequently studied in one of the Colleges of the Queen's University the Course herein prescribed.
3. To have passed the University Examinations herein prescribed.

The Course for the Degree of Bachelor in Arts shall extend over three Sessions, and shall comprise attendance on the following curriculum:—

FIRST SESSION.

English (One Term).
Greek.
Latin.
A Modern Continental Language.
Mathematics (First Course).

SECOND SESSION.

Logic (One Term).
Natural Philosophy.

Along with any two of the following:—

Greek (Second Course).
Latin (Second Course).
Modern Continental Languages (Second Course).
Mathematics (Second Course).

THIRD SESSION.

English Language and Literature.
Metaphysics, or History, or Political Economy (Two Terms).
Chemistry.
Zoology, or Botany.

Attendance on these Courses shall, in all cases, be understood to include passing such examinations as may be appointed by the College Council, and the catechetical parts of the Courses of Lectures.

Candidates for the Degree of Bachelor of Arts shall reside at their respective Colleges during at least the first two terms of each Session, but may be exempted from residence during the third term by a special grace of the College Council.

Third year's Students may substitute attendance on one or on two Courses of Honor Lectures, for a like number of the Courses above set down for study in the third Session.

Candidates for the Degree of Bachelor in Arts shall pass two University Examinations—a Preliminary and a Degree Examination.

The Course for the Preliminary Examination shall include Greek, Latin, a Modern Continental Language, and Mathematical Science. Students who have completed their second Session must pass this Examination before rising to the third year, unless prevented by illness or other inevitable accident, in which case the Senate may admit them to a Supplementary Examination.

Candidates who have completed the Undergraduate Course, may offer themselves at the Degree Examination for graduation either with Honors or without Honors.

If they seek to graduate with Honors, they may select for their Examination any one of the following groups:—

Greek and Latin.
Modern Continental Languages.
Mathematical Science.
Experimental Science.
Natural Science.

Or any three of the following:—

English Language and Literature.
Metaphysics.
History.
Political Economy.
Logic.

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Candidates who seek the Degree without Honors, may select for their Examination any group of the subjects from the following lists, provided the sum of the numbers attached in this list to the selected subjects be at least four:—

English Language and Literature,	2	Latin,	1
Mathematical Science,	2	Each Modern Continental Language,	1
Experimental Physics,	2	Logic,	1
Chemistry,	2	Metaphysics,	1
Zoology,	1	History,	1
Botany,	1	Political Economy,	1
Greek,	1		

English Composition will form a part of all University Examinations.

2. DEGREE OF M.A.

Candidates for the Degree of M.A. are admitted to the University Examinations for that Degree one year after having taken the Degree of B.A.

Course for the Degree of Master in Arts.

Bachelors in Arts of one year's standing, may offer themselves for Examination for the Degree of Master in Arts, and may select for their Examination any one of the following groups:—

Greek and Latin.
Modern Continental Languages.
Mathematical Science.
Experimental Science.
Natural Science.

Or any three of the following:—

English Language and Literature.
Metaphysics.
History.
Political Economy.
Logic.

This Ordinance supersedes former Ordinances prescribing the curriculum for the Degree of Master in Arts.

LECTURES.

The Lectures in this Faculty for the Session 1874–75, commenced on *Monday, the 26th October*, 1874.

The following Table shows the days, hours of Lectures and fees for the ordinary course. In accordance, however, with the regulations of the University for the Degree of B.A., Students may substitute for one or two Courses in the third year a like number of Honor Courses:—

	CLASS.	Terms.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Fees.		
									£	s.	d.
First Session.	English,	2	–	11	–	11	–	10	1	0	0
	Greek,	1, 2, 3	10	–	9	9	10	–	2	0	0
	Latin,	1, 2, 3	9	10	10	10	–	–	2	0	0
	Modern Languages,	1, 2, 3	2	–	2	–	2	–	2	0	0
	Mathematics (1st Course)	1, 2, 3	12	–	12	–	12	–	2	0	0
	College Fee,	–	–	–	–	–	–	–	0	10	0
Second Session.	Logic,	2	–	11	–	11	–	9	1	0	0
	Natural Philosophy,	1, 2, 3	11	–	11	–	11	–	2	0	0
	Greek (2nd Course),	1, 2, 3	9	9	10	–	9	–	2	0	0
	Latin ,,	1, 2, 3	10	–	9	–	10	–	2	0	0
	Modern Languages ,,	1, 2, 3	1	–	1	–	1	–	1	0	0
	Mathematics ,,	1, 2, 3	2	–	2	–	2	–	2	0	0
	College Fee,	–	–	–	–	–	–	–	0	5	0
Third Session.	English Language and Literature,	1, 2	–	12	–	12	–	11	2	0	0
	Chemistry,	1, 2, 3	11	–	11	–	11	–	2	0	0
	Metaphysics, or	1, 2	–	1	–	1	–	10	2	0	0
	History, or	1, 2	12	–	12	–	12	–			
	Political Economy,	1, 2	–	11	11	11	11	–			
	Zoology or Botany,	–	3	–	3	–	3	–	2	0	0
	College Fee,	–	–	–	–	–	–	–	0	5	0

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HONOR COURSES.

By the regulations of the University Senate, a Student of the third year may substitute for two courses in the ordinary curriculum the same number of honor courses.

Under this Regulation Candidates are at liberty to substitute one or two of the following courses for a like number of the courses set down in the above table for study in the Third Session, viz.:—

Greek,
Latin,
Pure Mathematics,
Mathematical Physics,
Experimental Physics,
Geology & Physical Geography,
French,
German,
Italian,
Logic;

provided that the Rules of the College Council admit of their making this substitution, and provided further that the courses substituted are courses specially preparing Students for one or more of the Honor Examinations for the degree of B.A.

Candidates are allowed under the same conditions to attend Honor Courses on two of the subjects, Metaphysics, History, and Political Economy, as two of the courses of the Third Session. Candidates who avail themselves of this permission are at liberty to attend the third of these subjects as another course of the Third Session.

A similar interpretation applies to the courses of Botany and Zoology, which will count as two courses of the Third Session, provided that one of them be an Honor Course, attended under the conditions stated above.

OUTLINES OF THE COURSES OF LECTURES DELIVERED BY THE PROFESSORS OF THE FACULTY OF ARTS.

LITERARY DIVISION OF THE FACULTY OF ARTS.

The Greek Language.

Professor, JOHN RYALL, LL.D.

Junior Class: Monday, Wednesday, Thursday, and Friday.
Xenophon—Memorabilia, Book I. Euripides—Alcestis.
Second Year: Monday, Tuesday, Wednesday, and Friday.
Homer—Odyssey, Book XIX., XX. Euripides—Iphigenia in Aulide. Demosthenes—Phillipic Orations.
Third Year: Tuesday, Thursday.
Aristophanes—Aves. Plato—Protagoras. Thucydides, Book VII.
Exercises in Prose and Verse, according to the proficiency of the Students.

The Latin Language

Professor, BUNNELL LEWIS, M.A., F.S.A.

Senior Class, Monday, Wednesday, and Friday:
Tacitus—Agricola.
Virgil—Georgics, Book II.
Junior Class, Monday, Tuesday, Wednesday, and Thursday:
Horace—Odes, Book III.
Cicero—Ad Familiares, part of Book S. I., II
Exercises in both Classes chiefly from Arnold's Introductions to Latin Composition.
Extra and Third Year's Class, Tuesday and Thursday:
Cicero—Phillipic, II.
Lucretius, Book II.

In this Class special attention is paid to original Composition, and to translation from English Authors into Latin.

History, the English Language and English Literature.

Professor, GEORGE FRANCIS ARMSTRONG, M.A.

1st and 2nd Term. History—Monday, Wednesday, and Friday.
2nd Term—The English Language—Tuesday, Thursday, and Saturday.
1st and 2nd Term. English Literature—Tuesday, Thursday, Saturday.

History:

European History—From the Decline of the Roman Empire to the present time.

THE ENGLISH LANGUAGE.

The History of its development.

Books recommended:—

Morris—Historical Outlines of English Accidence.
Trench—Study of Words: English, Past and Present.
Marsh—Lectures on the English Language.
Rask—Anglo-Saxon Grammar (edited by Thorpe); or Vernon—Anglo-Saxon Guide.
Thorpe—Analecta Anglo-Saxonica.
Morris and Skeat—Specimens of Early English.
Morris—The Prologue to Chaucer's Canterbury Tales, and the Editor's Introduction.
Skeat—Specimens of English Literature.
Rushton—Rules and Cautions in English Grammar.
Max Müller—Science of Language.
Whately—Elements of Rhetoric.
Campbell—Philosophy of Rhetoric.

Essays and Translations will be required of the Students from time to time.

ENGLISH LITERATURE.

History and Criticism of the Literature of England from the earliest period to the present day.

The Lives of the Great English Writers.

The Epochs of Foreign Literature which have most affected the form and spirit of the Literature of England.

Books recommended:—

Morley—A First Sketch of English Literature.
Shaw—Manual of English Literature (edited by Dr. Smith).
Craik—History of English Literature.
Chambers—Cyclopædia of English Literature.
Hallam—Introduction to the Literature of Europe.
Taine—History of English Literature, translated by H. Van Laun.

Critical Essays on subjects treated of in the Lectures will be required of the Students at set times.

Modern Languages.

Professor, R. DE VERICOUR, M.A.

French Class (Medical), Mondays, Wednesdays, and Fridays, at 12 o'clock.

Senior French (Arts and Engineering), Mondays, Wednesdays, and Fridays, at 1 o'clock.

Junior French Class (Arts and Engineering), Mondays, Wednesdays, and Fridays, at 2 o'clock.

German or Italian, Tuesdays and Fridays, at 2 o'clock.

Medical French—L'Année Scientifique pour 1872, par Louis Figuier (Hachette, King William Street, London.) Extracts from Bichat, Andral, Lallemand, and Chomel. Weekly Lectures on the Grammar and Idioms.

Senior and Junior French—Textes classiques de la Littérature Française par S. Demogeot. Fables de Lafontaine. Histoire de la Revolution Française, par Mignet. Histoire de la Littérature Française, par Demogeot. Weekly Lectures on the Grammar and Idioms.

Italian—Silvio Pelico. Tasso. Extracts from Macchiavelli, Guicciardini, Manzoni. Weekly Lectures.

German—Göethe's Ballads and Iphigenie. Schiller's Wilhelm Tell. National Literatur, von A. F. Villmar. Weekly Lectures.

SCIENCE DIVISION OF THE FACULTY OF ARTS.

Mathematics.

Professor, CHARLES NIVEN, M.A.

Junior Class, Monday, Wednesday, and Friday.
Subjects—Arithmetic, Algebra, Geometry, and Plane Trigonometry.

Second Year's Class, Monday, Wednesday, and Friday.
Subjects—Analytical Geometry, Trigonometry, Differential and Integral Calculus.

Third Year's Class:
Subjects—Geometry of three dimensions, Differential Equations, &c.
Exercises are regularly set in each of the Classes.

Logic and Metaphysics.

Professor, GEORGE SIDNEY READ, M.A.

2nd Term,	Logic,	Tuesday, Thursday, and Saturday.
1st & 2nd Terms,	Metaphysics,	Do. do. do.

LOGIC.

This Course consists of:—

I.—Lectures, Examinations, and Exercises in Aldrich's Compendium of Logic, occupying the early part of the Term, &c.

II.—A full discussion of Classification, the Theory of Hypothetical Syllogisms and of Induction, and the Analytic of Logical Forms, as contained in the works of Mill, Whately, Thompson, and Baynes.

Throughout the Course the Students will be expected to familiarize themselves with the reduction of arguments to their strict Logical Form by written exercises, which will be examined by the Professor.

METAPHYSICS.

This Course will embrace:—

I.—The Philosophy of the Inductive Sciences, illustrated by reference to Lord Bacon, Whewell, and Mill;' and—

II.—The History of Mental Philosophy, comprising—

1st—The origin, progress, and development of Modern Philosophy anterior to the rise of the Scottish School.

2nd—A critical examination of the works of the more celebrated writers of that School.

3rd—A brief view of the present state of Philosophy in the British Islands and on the Continent.

Political Economy.

Professor, RICHARD HORNER MILLS, M.A.

Political Economy.—The nature and distribution of wealth, the principles which regulate Rents, Profits, and Wages; the Principles of Commerce, of Taxation, of the Funding System, and of Currency and Banking.

Books recommended:—

Adam Smith—Wealth of Nations.
Senior—Political Economy.
Fawcett's Manual of Political Economy.
John Stuart Mill—Political Economy.
Richard H. Mills—Lectures on Currency and Banking (Second Edition).
M'Culloch—Taxation and Funding (Third Edition).
Goschen on Foreign Exchanges.

The Course consists of Twenty-four Lectures, delivered in the months of December, February, and March; the Students are required in the intervals to prepare the subjects which will be pointed out by the Professor.

Chemistry.

Professor, Maxwell Simpson, B.A., M.D., F.R.S.
Monday, Wednesday, and Friday.

The Course is divided into Inorganic and Organic Chemistry.

In the first part are discussed the Laws of Combination and Affinity, Molecular Chemistry and Crystallography, and the History of the Non-Metallic and Metallic substances.

In the Organic portion of the Course will be considered the subjects of Organic Analysis, Organic Series, Compound Radicals and Types, Metamorphosis of Organic Bodies, History of special Animal and Vegetable Bodies.

In treating of the Laws of Chemistry, and the History of Inorganic and Organic Bodies, those points will be chiefly dwelt upon which have a practical bearing in the Arts, Medicine, Engineering, and Agriculture. Thence, during the Course, attention will be directed to the application of Chemistry to Medicine and Physiology, to Metallurgic Operations, Chemical Manufactures, Building Materials, Soils, Manures.

Fee, for each Sessional Course, £2. Each subsequent Course in Medicine, £1.

Text Books recommended—Roscoe, Williamson, Fownes, Miller, Regnault.

Analytical Chemistry:

The Chemical Laboratory is open daily, except on Saturdays, from 10 to 4 o'clock, under the superintendence of the Professor, to students desirous of prosecuting an extended course of qualitative and quantitative analysis, and for the purpose of original investigation in connexion with the arts, or in the higher departments of Scientific Chemistry.

Natural Philosophy.

Professor, John England, M.A.

Experimental Physics (Senior):

Text Books—Galbraith and Haughton's Manuals of Mechanics, Hydrostatics, &c.; Jamin; Traité de Physique.

Experimental Physics (Junior):

Text Books—Ganot, Traité de Physique.

Mathematical Physics:

Text Books—Duhamel's Mecanique. Parkinson's Optics. Brinkley's Astronomy.

Engineering Physics:

Text Books—Tate's Exercises in Mechanics, selections from the works of Mosely, De Pambour, Weisbach, Twisden's Practical Mechanics, &c.

Natural History.

Professor, Joseph Reay Greene, B.A., M.D.
Monday, Wednesday, and Friday.

The Professor of Natural History will deliver a course of Lectures on Zoology and Botany.

Students may obtain Certificates of Attendance on either or both of these subjects. The Zoological part of the course will extend from the first Lecture-day in November to the end of February. The Botanical Lectures will occupy the remainder of the Session.

The Course will be arranged as follows:—

ZOOLOGY.

(About Forty Lectures.)

Invertebrate Animals (First Term).—Plants and Animals; the Animal Kingdom; the Lowest Animals; Infusories; Sponges; Cœlenterate Animals; Hydrozoans; Anthozoans and Beroës; Molluscoids; Brachionpods; Lamellibranchs; Gasteropods; Cephalopods; Echinoderms; the Lower

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Worms; the Higher Worms; Crustaceans; Insects (Arachnids and Myriapods); Insects (Hexapods); Review of the Higher Invertebrates.

VERTEBRATE ANIMALS (Second Term).—Vertebrate Animals; Leptocardians and Fishes; Marsipobranchs and Elasmobranchs; Teleosteans; Ganoids and Sirenoids; Batrachians; Reptiles; Ophidians and Lacertilians; Crocodilians and Chelonians; Extinct Reptiles; Birds; Typical Birds; Aberrant Birds; Mammals; Aplacental Mammals; Edentate and Mutilate Mammals; Ungulate Mammals; Micromammals; the Higher Mammals; Review of the Animal Kingdom.

BOTANY.

(Thirty Lectures.)

GENERAL BOTANY.—The parts of Plants; Protoplasm and Vegetable Cells; Tissues of Plants; the Life of Plants; Classification of Plants.

CRYPTOGAMIC BOTANY.—Cryptogams: Algæ; Mycetes; Mosses and allied Plants; Vascular Cryptogams

GENERAL MORPHOLOGY OF PHÆNOGAMS.—The Stem; Buds and Branches; Roots; Leaves; Flowers; the Fruit; the Seed; Homologies of Phænogams.

SPECIAL MORPHOLOGY OF PHÆNOGAMS.—Dicotyledons: Thalamiflorals; Discifloral; Calycifloral; Epigynous Gamopetals; Apogynous Gamopetals; Apetals; Gymnosperms. Monocotyledons: Epigynous Monocotyledons; Apogynous Monocotyledons; Glumiflorals.

Text Books:

Henfrey.—Elementary Course of Botany. (Second Edition, by Dr. Masters.)
Huxley.—A Manual of the Anatomy of Vertebrated Animals.

The following are also recommended:

Hooker, J. D.—Student's Flora of the British Islands.
Oliver.—First Book of Indian Botany.
Huxley.—Introduction to the Classification of Animals.
Rolleston.—Forms of Animal Life.

Those who wish fully to profit by the above Lectures would do well to read, before attending them, Oliver's Lessons in Elementary Botany, Mivart's Lessons in Elementary Anatomy, and Huxley's Lessons in Elementary Physiology.

Geology and Mineralogy.

Professor, ROBERT HARKNESS, F.R.SS.L. & E., F.G.S.

Tuesday, Thursday, and Saturday.

General Structure of the Earth; the causes at present in operation which modify its surface; Nature of Rocks which enter into composition with the crust of the Globe; description and classification of Sedimentary Deposits; Organic Remains; Physical Geography of the Earth during the several geological epochs; characters and nature of Igneous, Plutonic, and Metamorphic Rocks; Mineral Veins—their contents and mode of occurrence; application of Geology to Engineering and Mining.

Forms, Structure, Physical and Chemical characters of Minerals; descriptions of the most important simple minerals—circumstances and conditions under which they are found.

Text Books—Lyell's Students Elements of Geology—Herschell's Physical Geography—Nicol's Manual of Mineralogy.

SCHOLARSHIPS.

In the Faculty of Arts, there are Thirty Junior and Seven Senior Scholarships. Of the former there are awarded—

To Students of the first year, 5 in Literature and 5 in Science.
" second " 5 " 5 "

The Scholarships of the second year are held for two years under certain conditions.

The Senior Scholarships in Arts are tenable only by Graduates of less than two years' standing from the time of taking the Degree of B.A. They are thus appropriated:—

One in the Languages, Literature, and History of Ancient Greece and Rome.

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One to Modern Languages, Literature, and History, viz., English Language, Literature, and Composition; European and English History; the French Language, with German or Italian.

One to Mental and Social Science, viz., Logic, Metaphysics, and Political Economy.

One to Mathematics, viz., Pure Mathematics.

One to Natural Philosophy, viz., Experimental Physics, and Mixed Mathematics.

One to Chemistry, viz., Theoretical and Practical Chemistry.

One to Natural History, viz., Zoology and Botany, Geology, and Physical Geography.

Subjects of Examination for Literary Scholarships of the First Year.

The Greek Language:

Homer—The Iliad, Books I., II., III., IV., V., and VI.
Euripides—Phœnissæ.
Xenophon—The Anabasis, Books I., II., III., IV.
Lucian—Walker's Selections.
Greek Prose—Translation of short sentences from English into Greek.

The Latin Language:

Virgil—First six Books of the Æneid; the Georgics.
Horace—First two Books of the Odes, the Satires, and the Epistles, Books I., II.
Cicero—De Senectute, De Amicitiâ.
Sallust—Conspiracy of Catiline, and Jugurthine War.
Cæsar—The Gallic War, Books V., VI.
Latin Prose—Re-translations from English into Latin, of portions of Cicero.

N.B.—The Examination in Greek and Latin was conducted partly *vivâ voce*, and partly by printed questions.

The English Language:

Original Essays on subjects proposed by the Examiner. The Principles of English Grammar. The Laws of Etymology and Orthography. Craik's Outlines of the History of the English Language.

History and Geography:

Grecian History to the Death of Alexander the Great.
Roman History to the Accession of Augustus.
Outlines of Ancient and Modern Geography.

Subjects of Examination for Literary Scholarships of the Second and Third Years.

The Greek Language:

Homer—Odyssey, Books XIX., XX.
Sophocles—Antigone.
Plato—Apology.
Herodotus—Book I., cc. 1 to 100 inclusive.

Prose Composition.

The Latin Language:

Virgil—Eclogues and Æneid.
Horace.
Terence—Heauton Timorumenos.
Cicero—Tusculan Disputations.
Juvenal—Satires I., III., VIII., X., XIII., XIV.
Livy, Book IV.
Tacitus—Histories, Book I.

Composition in prose and verse.

The English Language:

Morris—Historical outlines of English Accidence, Chaps. I., II., III., IV., V.
Rask—Anglo-Saxon Grammar, edited by Thorpe.
The English of Chaucer, as illustrated by the Prologue to the Canterbury Tales. Morris's Edition, with the Editor's Introduction.
The History of the English People, to the accession of Henry IV.
English Composition.

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The French Language:
Molière—L'Avare; Le Misanthrope.
Lafontaine—Fables.
Histoire de la Littérature Française, par Demogeot.
Translation from English into French.

Subjects of Examination for Science Scholarships of the First Year.

Arithmetic.

Mensuration of Rectilineal Figures and of the Circle.

Algebra:

The Solution of Simple and Quadratic Equations, with one or more unknown quantities. Easy questions in the application of Algebra to Geometry. Arithmetical and Geometrical Progressions. The nature of Logarithms.

Euclid:

Books I., II., III., and IV., with deductions.

Trigonometry:

Definitions of the Sine, Tangent, &c., of an angle. The easier analytical formulæ. The Solution of Plane Triangles, with demonstrations. Nature and Use of the Tables.

Subjects of Examination for Science Scholarships of the Second and Third Years.

The Higher Arithmetic, with Mensuration.

Algebra:

The Solution of Equations, with one or more unknown quantities. Elimination. Theory and use of Logarithms. Theory of Equations. Binomial and Exponential Theorems. Compound Interest and Annuities.

Geometry:

Euclid, Books I., II., III., IV., VI.; Definitions of Book V., and first 21 Propositions of Book XI., with deductions. Analytical Geometry.

Trigonometry:

The Solution of Plane Triangles, with demonstrations of the formulæ. Theorems relating to single arcs. Theorems relating to the sums and differences of arcs. Application to heights and distances.

*For the Senior Scholarships in the Greek and Latin Languages, and Ancient History.**

The Greek Language:
Æschylus—Septem contra Thebas.
Together with the subjects for the B.A. Honor Examination at the University.
Composition in Attic Prose.
Greek Literature and History.

The Latin Language:
Virgil.
Horace.
Lucretius, Books I., II.
Ovid—Fasti, Book I.
Persius.
Terence—Andria.
Plautus—Capteivei.
Cicero—De Oratore.
,, Tusculan Disputations.
,, Ad Atticum, Books I., II.
,, Actiones Verrinæ.
Livy—Books IV. and XXII.
Tacitus—The Annals, Books I. to IV. inclusive.
Composition in prose and verse.

For Senior Scholarships in Modern Languages, Literature, and History.

The French Language:
Lavallée—Histoire des Français.
Histoire de la Littérature Française, par Demogeot ou Nisard.

The German Language:
Nationalliteratur, von A. F. Vilmar.
Schiller's Maria Stuart.
Goethe's Iphigenie.
Translation from English into one of the above Languages.

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* Where more than one subject enters into the examination for Senior Scholarships, a competent knowledge of all these subjects is required from the successful candidate.

The Italian Language:
Tasso—La Gerusalemme Liberata—first five Cantos.
Dante's Inferno—Italian Literature, published by Messrs. Chambers.
Translation from English into French, German, or Italian.

English:
THE ENGLISH LANGUAGE.
The History of the English Language.
ENGLISH LITERATURE.
Chaucer—The Knight's Tale.
Spenser—The Faërie Queene, Book I.
Shakspere—Macbeth. Julius Cæsar.
Milton—Samson Agonistes.
Dryden—Absalom and Achitophel.
Pope—Satires and Epistles.
Wordsworth—Poems founded on the affections.
History:

1. The Feudal System.
2. History of the Crusades.
3. The History of Europe from the Peace of Westphalia (1648) to the Treaty of Utrecht (1713).

For the Senior Scholarship in Mathematics.

The subjects of previous Examinations (for which see page 34), with the following additions:—
Analytical Geometry of Three Dimensions.
Differential Equations.

For the Senior Scholarship in Natural Philosophy.

Duhamel—Mécanique.
Brinkley—Elements of Astronomy, including the Appendix.
Parkinson's Optics.
Everett's Translation of Deschanel's Natural Philosophy.

For the Senior Scholarship in Mental and Social Sciences.

The subjects discussed in the Lectures of the Professors, with the following additions:—

Metaphysics and Logic:
Sir William Hamilton's Philosophical Essays and Notes on Reid.
Mill—System of Logic, Book III. to the end of Volume I.

Political Economy:
Principles of Political Economy, by John Stuart Mill.
Senior's Political Economy.
Goschen on Foreign Exchanges.
R. H. Mills—Lectures on Currency and Banking—second edition.

The value attached to the subjects will be in the following proportions, viz.:—

Metaphysics and Logic, . .	60
Political Economy, . . .	40

For the Senior Scholarship in Chemistry.

Chemical Physics (in Miller's Chemistry).

Inorganic Chemistry:
General principles of Chemical Philosophy. Modern views of Chemistry. Crystallography.
Chemistry of the Metals. Constitution of Salts. Metallurgy.

Organic Chemistry:
Ultimate analysis of Organic Bodies. Recent views of the constitution of Organic Bodies. Empirical and Rational formulæ. Determination of the density of Vapours. Law of Substitution. Homologous Series. Chemical Types. Preparation and Properties of the Alcohol Series and their Derivatives. Cyanogen, its Compounds and Derivatives. Organic Bases of Artificial Origin.

Practical Chemistry:
The Analysis of Mixtures, containing two or more Acids and Bases.

For the Senior Scholarship in Natural History.

The Lectures of the Professors.
Henfrey—Elementary Course of Botany. (Second Edition, by Dr. Masters). Parts I. and III.
Hooker, J. D.—The Students' Flora of the British Islands (The Characters of the Orders and Tribes).
Huxley, T.—Lessons in Elementary Physiology.
Mivart, St. J.—Lessons in Elementary Anatomy.
Rolleston—Forms of Animal Life.
Lyell—Students' Elements of Geology.

See Appendix No. I., p. 23, for the University Exhibitions and Prizes in the Faculty of Arts.

No. III.
Faculty of
Law.

No. III.—FACULTY OF LAW.

DEGREES.

Candidates for the Diploma of Elementary Law must have passed a Matriculation Examination, and pursued the following

Course of Study for the Diploma of Elementary Law.

FIRST SESSION.

Law of Real Property, Principles of Conveyancing—Jurisprudence.

The Course of the Professor of English Law for the First Year's Class comprises Elementary Instruction in the Law of Real Property, and in practical Conveyancing. The text-book read is "Williams on Real Property."

The following works are recommended for perusal;—

Blackstone's Commentaries, by Stephen, Vol. I., and Vol. II. of Kerr's edition of the same work.

SECOND SESSION.

Law of Personal Property, Equity, and Bankruptcy—Civil Law.

The Course of the Professor of English Law for the Second Year's Class comprises instruction in the Law of Personal Property, Equity, Bankruptcy, and the practice relating to those branches of Law. The text-books read are, "Smith on Contracts," "Williams on Personal Property," and "Snell's Principles of Equity."

The following are recommended for perusal:—

Blackstone's Commentaries, by Stephen, Vol. II., same, by Kerr, Vol. II., Smith's "Mercantile Law,"Smith's "Manual of Equity," Story's "Equity Jurisprudence." Vol. I.; Kisbey on the Bankruptcy Acts, 1857 and 1872; the Debtors' Act, 1872.

THIRD SESSION.

Common and Criminal Law.

The Course of the Professor of English Law for the Third Year's Class comprises the History, Constitution, and Jurisdiction of the several Courts of Justice, and their Procedure. The text-books are the third and fourth volumes of Blackstone's Commentaries, editions by Stephen and Kerr.

The following works are recommended for perusal:—

"Broom's Common Law," "Broom's Legal Maxims," "Smith's Leading Cases," "Copinger's County Courts," by Johnstone, Common Law Procedure Acts, 1853 and 1856, &c., by Bewley and Nash; Woolrych's Criminal Law, or Russell on Crimes.

Candidates for the Degree of LL.B. will be admitted to Examination for that Degree from the Queen's University in Ireland, provided they shall have proceeded to the Degree of A.B., and shall have attended the Lectures and passed the Examinations prescribed for the Diploma of Elementary Law.

Students who have obtained the Degree of LL.B. will, at the expiration of two years after they have obtained the Degree, be admitted to the Examination for the Degree of LL.D. They are examined in the Laws of the Admiralty and Ecclesiastical Courts of England and Ireland, and in International Law, for which Examination the following Books are suggested:—

Lord Hale's Treatise, De Jure Maris.
Dr. FitzHenry Townsend's statement of the differences in Jurisdiction and Practice between the English and Irish Courts of Admiralty, annexed to the Report of the Royal Commission of Inquiry, 1864.
Rogers' Ecclesiastical Law.
Wheaton's International Law.
"Historicus," Letters of, on International Law.

LECTURES.

The complete Course for each Class consists of Twenty-four Lectures, by the Professor of English Law, in each Collegiate Session of three years, and of Twenty-four Lectures by the Professor of Jurisprudence, in each course of the first two years. The Lectures are delivered after Michaelmas Law Term, in the month of December, and after Hilary Law Term, in the months of February and March. Five-sixths of the Lectures in each Course must be attended.

Students proceeding to the Irish Bar, if they be Graduates in Arts of the Queen's University, and have for two years attended the Lectures, and passed the Examinations of the Professors of Law in any of the Queen's Colleges, will be required to attend but for one year at the Lectures of the Professors of the King's Inns: provided, however, that such Students be admitted as Students of the King's Inns within one year after the completion of such legal course in the Queen's College.

Students proceeding to the Irish Bar, who are not Graduates in Arts of the Queen's University, but have for one year attended the Lectures of the Professors of Law in any of the Queen's Colleges, will be required to attend for two years at the Lectures of the Professors of the King's Inns.

Graduates, or Undergraduates, are excepted from the operation of the Benchers' rule requiring Law Students to pass an examination in the English Language and Literature, and the Latin Language.

With respect to Students for the English Bar, the Council of Legal Education may accept a Degree in Law granted by the Queen's University, as an equivalent for the Examination to be passed in any of the following subjects, viz.:—Roman Civil Law; the Law of Real and Personal Property; provided the Council is satisfied that the Student, before he obtained his Degree, passed a sufficient Examination in such subject or subjects.

Students preparing for the profession of Attorney or Solicitor in Ireland, can save two years of their apprenticeship by taking the Degree of B.A. or of LL.B., in the Queen's University.

Students intending to proceed, so as to entitle themselves to serve an apprenticeship of four years instead of five, under the Attorneys' and Solicitors' Act, Ireland, 1866, must enter their names with one of the Registrars of the Queen's Colleges of Cork, Belfast, or Galway, and pay the necessary College and Class Fees to the Bursar before the commencement of the Law Lectures in each Session. Such Students need not pass the Matriculation Examination, but must attend the Lectures, and pass the College Examinations prescribed for the first and second years, of the course of study for Candidates for the Diploma in Elementary Law.

SCHOLARSHIPS.

Subjects of Examination.

FIRST YEAR.

Examination by the Professor of Jurisprudence:—

Reddie's Inquiries in the Science of Law.
Adam Smith's Wealth of Nations—Book III.
Hallam's Middle Ages—Chap. 2 and 8.

Examination by the Professor of English Law:—

Williams—Principles of the Law of Real Property.

Appendix A.

No. III. Faculty of Law.

SECOND YEAR.

By Professor of Jurisprudence.

The Lectures of the Professor in the First Year.
Ancient Law, by H. S. Maine.
The Chapters on Social Science in J. S. Mill's Logic—Book VI., Chap. 6, to end of the Book.
Austin's Jurisprudence, Vol. 1, 3rd Edition.

By Professor of English Law.

The Lectures of the Professor for the preceding year.
Smith—Manual of Equity Jurisprudence.
Williams—Principles of the Law of Personal Property.
Smith—On Contracts.

THIRD YEAR.

By Professor of Jurisprudence.

Austin's Jurisprudence, Vol. 2, 3rd Edition.
Sandar's Justinian, and the Lectures of the Professor, in the first and second year.

NOTE.—The following works, in addition to the text-books mentioned, should be referred to in connexion with the principal subjects discussed in the Lectures on Jurisprudence:—

Dumont's Bentham (translation by Hildreth), "Principles of Legislation," and 1st and 2nd parts of the "Principles of the Civil Code."
Stephens' "Criminal Law."
Spence's Equity Jurisprudence. Vol. I., Part I.
Mackenzie's Roman Law.

By Professor of English Law.

The Lectures of the Professor for the preceding years.
Smith—Leading cases on branches of the Law.
Storey—Equity Jurisprudence.

The Senior Law Scholarship will be awarded, by Examination, to the most distinguished Student who shall have proceeded in the Course of Arts to the Degree of A.B., and who shall have completed the Course of Legal Study prescribed to Candidates for the Degree of LL.B. in the Queen's University in Ireland.

Examination for the Senior Scholarship in Law.

The Lectures of the Professors and subjects appointed for Scholarship Examination in the preceding years.
Sugden—The Law of Vendors and Purchasers.
Furlong—Law of Landlord and Tenant.
Taylor—Treatise on the Law of Evidence.
Stephen—Treatise on the Principles of Pleading.
Stephen—Commentaries, Books V., VI.
Hallam—Constitutional History.
Broom's Constitutional Law.
Spence's Equity Jurisprudence, Vol. I., Part 1.

No. IV. Faculty of Medicine.

No. IV.—FACULTY OF MEDICINE.

DEGREES OF M.D. AND M.CH.*

Students who wish to obtain the Degree of M.D., or of M.Ch. in the Queen's University, must be matriculated Students of one of the Queen's Colleges, and must pursue the courses of study prescribed by the Senate of the University.

Medical Students may matriculate either at the General Matriculation Examination (held in 1874, on the *20th of October*), or at the Supplementary Examination held in the second or third week of *November*.

The following are the Regulations of the Senate concerning those Degrees:—

Each Candidate for the Degree of Doctor in Medicine or Master in Surgery is required—

1st—To have passed in one of the Colleges of the Queen's University the Entrance Examination in Arts, and to have been admitted a Matriculated Student of the University.

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* The regulations under which degrees in Surgery will be conferred on Candidates who graduated in Medicine before the year 1865, may be learned on application to the Secretary of the Queen's University.

2nd—To have attended in one of the Queen's Colleges, Lectures on one Modern Continental Language for six months, and Lectures on Natural Philosophy for six months.

3rd—To have also attended, in some one of the Queen's Colleges, at least two of the courses of Lectures marked with an asterisk. For the remainder of the courses, authenticated certificates will be received from the Professors or Lecturers in Universities, Colleges, or Schools, recognised by the Senate of the Queen's University in Ireland.

4th—To pass two University Examinations—the First University Examination, and the Degree Examination.

The Curriculum shall extend over at least four years, and shall be divided into periods of at least two years each.

Candidates are recommended to pass the Matriculation Examination prior to entering on the second period.

It is recommended that the first period shall comprise attendance on the following Courses of Medical Lectures:—

* Chemistry.
* Botany, with Herborizations for practical study, and Zoology.
* Anatomy and Physiology.
* Practical Anatomy.
* Materia Medica and Pharmacy.

And that the second period shall comprise attendance on the following Courses of Medical Lectures:—

Anatomy and Physiology (Second Course).
Practical Anatomy (Second Course).
* Theory and Practice of Surgery.
* Midwifery.
* Theory and Practice of Medicine.
* Medical Jurisprudence.

In addition to the above Courses of Lectures, Candidates shall have attended during either the first or second period—

A Modern Continental Language (in one of the Colleges of the University).
Experimental Physics (in one of the Colleges of the University).

Also, during the first period—

Practical Chemistry (in a recognised Laboratory).
Medico-Chirurgical Hospital (recognised by the Senate) containing at least sixty beds, together with the Clinical Lectures therein delivered, at least Two each Week—a Winter Session of Six Months.

And during the second period—

Practical Midwifery, at a recognised Midwifery Hospital with the Clinical Lectures therein delivered—for a period of Three Months, in an Hospital containing not less than Thirty beds; or six Months, in an Hospital containing not less than Fifteen beds.
Medico-Chirurgical Hospital (recognised by the Senate) containing at least sixty beds, together with the Clinical Lectures therein delivered—Eighteen Months; including either three Winter Sessions of Six Months each, or two Winter Sessions of Six Months each, and two Summer Sessions of Three Months each.

Medical Examinations are held in June, and in September and October.

The June Examinations are Pass Examinations, and commence on the Tuesday following the Second Saturday in June.

The Honor Examinations commence on the last Tuesday in September, and are followed by Pass Examinations.

Each Candidate for Examination in June must forward to the Secretary, on or before the first of June, notice of his intention to offer himself as a Candidate along with his Certificates; and each Candidate for Examination in September or October must forward similar notice, along with his certificates.

Appendix A.

No. IV.
Faculty of Medicine.

Lectures.

The Medical Session was opened on Monday, 2nd November, 1874, and the Courses of Lectures commenced as under:—

Anatomy and Physiology.

Monday, 2nd of November, at One o'clock, and continued daily, except on Saturdays, at the same hour.

Practice of Medicine.

Monday, 2nd of November, at Three o'clock, and continued on Mondays, Wednesdays, and Fridays, at the same hour.

Practice of Surgery.

Tuesday, 3rd November, at Four o'clock, and continued on Tuesdays and Thursdays, at Four o'clock, and Saturdays, at One o'clock.

Materia Medica.

Tuesday, 3rd November, at Three o'clock, and continued on Tuesdays and Thursdays, at Three o'clock; and on Saturdays, at Twelve o'clock.

Medical Jurisprudence.

Tuesday, 3rd November at One o'clock, and continued on Tuesdays and Thursdays, at the same hour, and on Saturdays at Two o'clock.

Midwifery.

Monday, 2nd November, at Four o'clock, and continued on Mondays, Wednesdays, and Fridays, at the same hour.

The Course of Practical Anatomy was conducted by the Professor of Anatomy and Physiology, assisted by Demonstrators.

The Anatomical Demonstrations

Commenced on 2nd of November, and were continued daily at Twelve o'clock, except Saturdays.

Chemistry.

Monday, Wednesday, and Friday, at Eleven o'clock.

Practical Chemistry.

Monday, Wednesday, and Friday, at Two o'clock. (See note, p. 21.)

Zoology and Botany.

Monday, Wednesday, and Friday, at Three o'clock.

Natural Philosophy.

Tuesdays and Thursdays.

Modern Languages.

Monday, Wednesday, and Friday.

The following Curriculum is recommended for all Medical Students:—

FIRST YEAR.
Anatomy and Physiology.
Chemistry.
French or German.
Natural Philosophy.
Zoology and Botany.

SECOND YEAR.
Anatomy and Physiology.
Materia Medica.
Practical Anatomy.
Practical Chemistry.

THIRD YEAR.
Surgery.
Midwifery.
Practical Anatomy.

FOURTH YEAR.
Practice of Medicine.
Medical Jurisprudence.

Note.—The 16th of November will be the last day for entering for the Six Months' Courses of Lectures in the above Curriculum. All the Lectures are recognised by the Queen's University in Ireland, by the Universities of London, Glasgow, Aberdeen, and St. Andrew's; the Colleges of Surgeons of Dublin, Edinburgh, and London; by the Apothecaries' Companies, by the Army, Navy, and East India Medical Boards, &c., &c.

Appendix A.

No. IV. Faculty of Medicine.

TABLE OF FEES.

FIRST YEAR.

	£	s.	d.
Anatomy and Physiology,	3	0	0
French,	2	0	0
Natural Philosophy,	2	0	0
Natural History,	2	0	0
Chemistry,	2	0	0
College Fee,	0	10	0

SECOND YEAR.

	£	s.	d.
Anatomy and Physiology, if a Second Course,	2	0	0
Practical Anatomy,	3	0	0
Practical Chemistry,	3	0	0
Materia Medica,	2	0	0
College Fee,	0	5	0

THIRD YEAR.

	£	s.	d.
Practical Anatomy,	3	0	0
Midwifery,	2	0	0
Surgery,	2	0	0
College Fee,	0	5	0

FOURTH YEAR.

	£	s.	d.
Medical Jurisprudence,	2	0	0
Medicine,	2	0	0
College Fee,	0	5	0

HOSPITAL ATTENDANCE.

Clinical Lectures on Medicine and Surgery are delivered at the North and South Infirmaries, by the Physicians and Surgeons of those Institutions.

	£	s.	d.
Fee for twelve months,	8	8	0
Fee for six months,	5	5	0
Practical Pharmacy at the same Infirmaries:			
Fee for three months,	3	3	0
Clinical Midwifery at the Lying-in Hospital, with Practical Attendance upon Thirty Midwifery cases:			
Fee for six months,	3	3	0

Further information may be had from the Medical Officers at the Infirmaries.

SCHOLARSHIPS.

There are Eight Scholarships in the Faculty of Medicine, which are thus allotted:—

To the First Year—Two—One for Literature and one for Science.
,, Second do. Two.
,, Third do. Two.
,, Fourth do. Two.

SUBJECTS OF EXAMINATION.

Scholarships of First Year.

1. LITERARY SCHOLARSHIP.

The Greek Language:

Homer—The Iliad, Books I., II., III., IV., V., and VI.
Euripides—Phœnissæ.
Xenophon—The Anabasis, Books I., II., III., IV.
Lucian—Walker's Selections.
Greek Prose—Translation of short sentences from English into Greek.

The Latin Language:

Virgil—First Six Books of the Æneid, the Georgics.
Horace—First Two Books of the Odes, the Satires, and the Epistles, Books I., II.
Cicero—De Senectute, De Amicitiâ.
Sallust—Conspiracy of Catiline and Jugurthine War.
Cæsar—The Gallic War, Books V., VI.
Latin Prose—Re-translations from English into Latin of portions of Cicero.
N.B.—The Examination in Greek and Latin was conducted partly *vivâ voce* and partly by printed questions.

The English Language:

Original Essays on subjects proposed by the Examiner. The Principles of English Grammar. The Laws of Etymology and Orthography. Craik's Outlines of the History of the English Language.

History and Geography:

Grecian History to the Death of Alexander the Great.
Roman History to the Accession of Augustus.
Outlines of Ancient and Modern Geography.

2. SCIENCE SCHOLARSHIP.

Arithmetic:

Mensuration of Rectilineal Figures and of the Circle:

Algebra:

The Solution of Simple and Quadratic Equations, with one or more unknown quantities. Easy questions in the application of Algebra to Geometry. Arithmetical and Geometrical Progressions. The Nature of Logarithms.

Euclid:

Books I., II., III., and IV., with Deductions.

Trigonometry:

Definitions of the Sine, Tangent, &c., of an Angle. The easier analytical formulæ. The Solution of Plane Triangles with Demonstrations. Nature and use of the Tables.

Scholarship of the Second Year.

Anatomy and Physiology.
Chemistry.
General Physics.
Zoology and Botany.
The French Language.

Scholarship of the Third Year.

Anatomy and Physiology.
Practical Anatomy.
Materia Medica.
Practical Chemistry.

Scholarship of the Fourth Year.

Anatomy and Physiology.
Practical Anatomy.
Pathology and Morbid Anatomy.
Therapeutics.
Surgery.
Midwifery.

See Appendix No. I., p. 24, for the University Exhibitions and Prizes in the Faculty of Medicine.

No. V. School of Engineering.

No. V.—School of Engineering.

Degree in Engineering.

To obtain the Degree in Civil Engineering, Students must matriculate in Engineering, complete the prescribed course in one of the Queen's Colleges, and pass the University Examinations. Of these there are two; the Preliminary Examinations at the commencement of the third Session, and the Final Examination in the following September.

Each Candidate for the Degree in Civil Engineering is required—

1. To have been admitted a Matriculated Student of the Queen's University in the Department of Civil Engineering.
2. To have studied in the Colleges of the Queen's University the Course herein prescribed.
3. To have passed the University Examinations herein prescribed.

The Course for the Degree in Civil Engineering

Shall usually extend over Three Sessions, and shall comprise attendance on the following Curriculum:—

FIRST SESSION.

Mathematics (First Course).
Chemistry.
Modern Languages.
Geometrical Drawing.
Office Work.
Mineralogy, Geology, and Physical Geography.

SECOND SESSION.

Mathematics (Second Course).
Experimental Physics.
Civil Engineering.
Office Work.
Field Work.

THIRD SESSION.

Natural Philosophy, applied.
Mathematical Physics.
Civil and Mechanical Engineering.
Office Work.
Field Work.
Engineering Excursions.

Attendance on these Courses shall in all cases be understood to include passing such Examinations as may be appointed by the College Council, as well as the catechetical parts of the Courses of the Lecture.

Engineering Students shall reside at their respective Colleges during at least the first two Terms of each Session, and can be exempted from residence during the third Term also, only by a special grace of the College Council.

The study of the Engineering Curriculum may be extended over more than three Sessions, on the recommendation of the College Council, and under such regulations as the Council shall impose. Some relaxation of the order in which the subjects shall be studied will also be admitted, on the recommendation of the Council.

Candidates will, on the special recommendation of the College Council, be admitted to the Degree after two years' residence instead of three, if their previous acquaintance with a sufficient group of the subjects above set down for study in the First and Second Session is deemed by the Council satisfactory. In such cases the Certificate of the Council will be accepted in lieu of attendances upon these Courses, but will not exempt Candidates from the University Examinations in them.

In order to obtain this Certificate, Students must have attended previously at least one Session in Arts, or one year in an Engineer's office. On making application to the Council, such Students will be allowed to present themselves, at the time of Matriculation, for examination in the subjects of any four of the eight Courses of Lectures of the first two years. On passing this Examination, they will be allowed to take rank at once as Students of the second year, and will then be required to attend those other four Courses of Lectures only, in the subjects of which they have not passed; but they will not be eligible for the Scholarship of that year.

The application to be admitted to this Examination must be lodged with the Registrar before the first day of the Session, and must state what are the four subjects in which the Students propose to offer themselves for Examination, and must be accompanied by a Certificate of the required attendance of one or more years in Arts or an Engineer's Office.

On passing the Sessional Examinations in the subjects of these four Courses of Lectures which they shall have attended as Students of the second year, they will be promoted to the rank of Students of the third year; and, on completing the regular Course of that year, will be furnished with the Certificate required by the Senate of the University.

The University Examinations shall extend to all the subjects of the above Curriculum. French will, in all cases, be required.

Candidates must present themselves before the close of their Collegiate Course for Examination in the following subjects, viz.:—Mathematics (*First Course*); Experimental Physics; Modern Languages; Geometrical Drawing (including Orthographic projection, Isometric projection, Descriptive Geometry, and Linear Perspective); Mathematics (*Second Course*); Mensuration, Levelling, and Mapping.

The final Examination shall extend to all the subjects of the Engineering Course, in which the Candidate shall not have previously passed. English Composition will form a part of each University Examination.

This Ordinance shall take effect from the first day of January, 1860; Students who shall have entered the Engineering Schools of the Colleges of Queen's

Appendix A.

No. V.
School of Engineering.

University previously, may proceed either under the present Ordinance, or under that hitherto in force.

LECTURES.

The Lectures in Engineering commenced on Monday, 26th October, 1874.

The following Table shows the various Classes which are to be attended in each year, with the corresponding days and hours of Lecture, and the College and Class Fee payable by Engineering Students:—

	CLASS.	Terms.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Fees.		
									£	*s.*	*d.*
1st Session.	Mathematics (1st Course),	1, 2, 3	12	–	12	–	12	–	2	0	0
	Chemistry,	1, 2, 3	11	–	11	–	11	–	2	0	0
	Modern Languages,	1, 2, 3	2	–	2	–	2	–	2	0	0
	Geometrical Drawing,	1, 2, 3	10	–	10	–	10	–	2	0	0
	Office Work (10 A.M. to 2 P.M.)	1, 2, 3	–	10	–	10	–	10	2	0	0
	Mineralogy, Geology, and Physical Geography,	1, 2, 3	–	2	–	2	–	12	2	0	0
	College Fee,	–	–	–	–	–	–	–	0	10	0
2nd Session	Mathematics (2nd Course),	1, 2, 3	2	–	2	–	2	–	2	0	0
	Experimental Physics,	1, 2, 3	–	–	–	–	–	–	2	0	0
	Civil Engineering,	1, 2, 3	–	10	–	10	–	10	2	0	0
	*Office Work (10 A.M. to 2 P.M.)	1, 2, 3	–	10	–	10	–	10	2	0	0
	College Fee,	–	–	–	–	–	–	–	0	5	0
3rd Session.	Natural Philosophy, applied,	1, 2, 3	–	2	–	2	–	–	2	0	0
	Mathematical Physics,	1, 2, 3	1	–	1	1	1	–	2	0	0
	Civil and Mechanical Engineering,	1, 2, 3	12	–	12	–	12	–	2	0	0
	*Office Work (10 A.M. to 2 P.M.)	1, 2, 3	–	10	–	10	–	10	2	0	0
	College Fee,	–	–	–	–	–	–	–	0	5	0

* For Students who have attended this Course in their first year, the Fee is £1.

OUTLINE OF THE COURSE OF LECTURES ON CIVIL ENGINEERING.

Professor, ALEXANDER JACK, M.A.

FIRST YEAR.

Monday, Wednesday, and Friday.

Subject of Lectures—Orthographic Projection; Descriptive Geometry; Shadows; Isometric Projection; Perspective; Geometry of the Oblique Bridge; Principles of Architecture.

Text Books—Hall's Descriptive Geometry; Engineer and Machinist's Drawing Book; Rickman's Architecture; Buck on Oblique Bridges.

SECOND YEAR.

Tuesday, Thursday, and Saturday.

Subject of Lectures—Surveying and Levelling.

Text Books—Rankine's Civil Engineering; Cotton's Manual of Railway Engineering; Williams' Geodesy.

THIRD YEAR.

Monday, Wednesday, and Friday.

Materials used in Construction; Principles of Construction of Bridges, Roads, Railways, Canals; Hydraulic Engineering; Strength of Materials; Principles of the Construction of the different Machines employed by the Engineer.

DRAWING OFFICE.

Attended by all the Classes—Tuesday, Thursday, and Saturday.

The First Year's Class are chiefly employed in drawing the problems given at lectures, and a few easy examples of their applications. The Second and Third Years' Classes, in making working drawings of examples of the subjects of lectures, and in Mapping.

Practical Instruction in the Field in the use of Surveying Instruments will be given during the Session.

For an outline of the other courses of lectures in the above table to be attended by Engineering Students, see Appendix No. II., p. 30, et seq.

No. V. School of Engineering

SCHOLARSHIPS.

In the School of Engineering there are five Scholarships, two of which are appropriated to Students of the first year, two to those of the second, and one to those of the third. (See also p. 22.)

SUBJECTS OF EXAMINATION.

The Subjects of Examination for the Engineering Scholarships are as follows:—

Subjects of Examination for Engineering Scholarships of the First Year.

Arithmetic:

Mensuration of Rectilineal Figures and of the Circle:

Algebra:

The Solution of Simple and Quadratic Equations, with one or more unknown qualities. Easy questions in the application of Algebra to Geometry. Arithmetical and Geometrical Progressions. The Nature of Logarithms.

Euclid:

Books I., II., III., and IV., with Deductions.

Trigonometry:

Definition of the Sine, Tangent, &c., of an Angle. The easier analytical formulæ. The Solution of Plane Triangles with Demonstrations. Nature and use of the Tables.

Subjects of Examination for Engineering Scholarships of the Second Year.

Mathematics:

The same as for Science Scholarships in Arts of the Second Year, except that Spherical Trigonometry will be substituted for Analytical Geometry.

French:

Demogeot—Histoire de la Littérature Française.
Translation from English into French.

Chemistry:

Laws of Combination and Affinity. Preparation and Properties of the Chief Organic Substances. Metallurgic Operations. Mortars and Cements.

Geometrical Drawing:

Descriptive Geometry—Orthographic Projection—Isometric Projection—Perspective—Geometry of Oblique Bridge.

Subjects of Examination for Engineering Scholarships of the Third Year.

Mathematics:

Algebra—Theory of Equations and Methods of Approximation. Elimination. Summation of Series. Binomial and Exponential Theorems. Scales of Notation, &c.
Trigonometry—Plane and Spherical, with Astronomical applications.
Analytical Geometry, and Geometrical Conic Sections.
Differential Calculus—Involving demonstrations of the rules for differentiating Algebraic, Circular, and Exponential Functions, founded upon a clear statement of the nature of Limits and Definition of a Differential coefficient. Taylor's and Maclaurin's Theorems. Maxima and Minima. Criteria of the same, with proofs, Equation of Tangent, Normal, Evolute, &c.
Integral Calculus, including more particularly Rational Fractions, Binomial Differentials, Areas of Curves, Rectification of Curves, Cubature of Solids of Revolution.

Natural Philosophy:

Newth's Mechanics.
Ganôt—Traité de Physique—Books VI., VII., VIII., IX.

Geology and Mineralogy:

Civil Engineering:

Instruments used by the Civil Engineer. Their adjustments and use. Surveying. Levelling.

See Appendix No. I. p. 24, for the University Exhibitions in Engineering.

APPENDIX B.

Appendix B.

List of Successful Candidates for Degrees, &c.

NO. VI.—UNIVERSITY DEGREES, DIPLOMAS, AND HONORS OBTAINED BY STUDENTS OF QUEEN'S COLLEGE, CORK, AT THE COMMENCEMENTS IN JUNE AND OCTOBER, 1874.

FACULTY OF ARTS.

DEGREE OF M.A.

James J. O'Donoghue,	First Class in Ancient Classics.

DEGREE OF B.A.

Charles W. Allison,	Second Class in Experimental Science.
John Molony,	Upper Pass Division.
William Stoops,	Upper Pass Division.

Passed.

Thomas G. Atkins.
Robert C. Black.
Charles M. Johnson.

FIRST UNIVERSITY EXAMINATION IN ARTS.

Samuel L. Brown,	Second Class.
Annesley Somerville,	Second Class.
Robt. N. T. Belcher,	Upper Pass Division.
Richard Belton,	Upper Pass Division.
Hamilton Benson,	Upper Pass Division.
Thomas M. Corker,	Upper Pass Division.
Denis F. Hannigan,	Upper Pass Division.

Passed.

Robert Ambrose.
Thomas Dorman.
Walter C. Johnson.
O'Byrne Crowe.
John Ronan.

FACULTY OF LAW.

DEGREE OF LL.B.

Henry Haslett Beattie.

DIPLOMA IN ELEMENTARY LAW.

William C. Taylor, Second Class.

FACULTY OF MEDICINE.

DEGREE OF M.D.

William J. Le Grand, First Class.

Passed.

John Adderley.
James F. Allen.
John T. Blackall.
William E. Breton.
Ludlow T. Colthurst, B.A.
Charles Cooper.
James Crofts.
Maurice C. Daly, B.A.
Gerald Fitzgerald.
John P. Greany.
Christopher Gunn.
Charles A. Harvey, A.B.
William Jennings.
Thomas Loane.
Timothy Mullane.
Thomas Neville.
Michael R. Ryan.
Robert Tidbury.

DEGREE OF MASTER IN SURGERY (M. CH.)

John Adderley.
James F. Allen.
Robert T. Beamish.
William E. Breton.
Albert J. Clapp.
James Crofts.
Maurice C. Daly, B.A.
John P. Greany.
Christopher Gunn.
Charles A. Harvey, B.A.
William Jennings.
William J. Le Grand.
Thomas Loane.
Charles J. M'Cartie.
James Moran, B.E.
Timothy Mullane.
Thomas Neville.
Michael R. Ryan.
Robert Tidbury.

Appendix B.

List of successful Candidates for Degrees, &c.

DIPLOMA IN MIDWIFERY.

John Adderley.
James F. Allen.
John J. Blackall.
William E. Breton.
Ludlow T. Colthurst.
James Crofts.
Maurice C. Daly, B.A.
John P. Greaney.
Christopher Gunn.
Charles H. Haines, B.A.
Charles A. Harvey, B.A.
William Jennings.
William J. Le Grand.
James Magill, B.A.
James Moran, B.E.
Timothy Mullane.
Thomas Neville.
Robert Tidbury.

SECOND UNIVERSITY EXAMINATION IN MEDICINE.

John F. Starkie,	First Class.	Hugh L. Donovan,	Upper Pass Division.
John J. Welply,	First Class.	Richard Jennings,	Upper Pass Division.
Charles H. Bennett,	Upper Pass Division.	Edw. J. Kennedy,	Upper Pass Division.

Passed.

George H. Bull.
Daniel Burden.
William F. Carmody.
William Coates.
Jephson Connell.
John J. Cornilliac.
William Crofts.
William C. Daly.
Arthur Derham.
John Dillon.
Michael Dundon.
Justin E. Donovan
Charles Fahie.
George T. Goggin.
Denis Harrington.
John C. Hartnett.
George Latour.
Francis H. S. Murphy.
Michael R. O'Connor.
John R. Oliver.
Michael U. O'Sullivan.
William S. Paterson.
William D. Power.
Charles K. Tanner, B.A.
William H. Thornhill, B.A.
William C. Williamson.
Daniel Wilson, M.A.
John Wilson, B.A.

FIRST UNIVERSITY EXAMINATION IN MEDICINE.

Michael J. M'Carthy,	Second Class.	Jeremiah Mullane,	Upper Pass Division.
John R. Galvin,	Upper Pass Division.		

Passed.

Charles H. Bennett.
Archibald Bland.
John Cahill.
John Carmody.
Michael Collins.
Peter Cullinane.
Hugh L. Donovan.
Robert E. Donovan.
Michael Dundon.
James P. Hanrahan.
Patrick C. Hickey.
Augustus P. Hills.
Edward J. Kennedy.
John Leonard.
Henry M. Madden.
Alfred H. Miller.
Thomas Newburgh.
Daniel O'Connor.
Jerome J. O'Sullivan.
Samuel Phillips.
Thomas F. Riordan.
John C. Greatrakes Sandiford.
John Sheehy.
John E. Walsh.

SCHOOL OF CIVIL ENGINEERING.

DEGREE OF BACHELOR OF ENGINEERING (B.E.)

William Kingston, . . . First Class.

Passed.

William V. Miller.

FIRST UNIVERSITY EXAMINATION IN ENGINEERING.

Daniel Connery, . . . First Class.

Passed.

O'Byrne Crowe.
George F. Miles.
Christopher F. O'Sullivan.
John J. O'Sullivan.
Charles J. L. White.

Appendix B

List of successful Candidates for Degrees &c.

UNIVERSITY PRIZES.

Second Examination in Medicine.

John J. Welply. £20 a year for two years.

First Examination in Engineering.

Daniel Connery. £15 a year for two years.

University Prizes at Entrance:

GEOMETRY,	Richard Eaton,	First.
	Matthew Kelly,	Second.
ENGLISH COMPOSITION,	Clarke Irwin,	First.
	Denham F. Franklin,	Second.

No. VII.—SCHOLARSHIP EXAMINATIONS.

FACULTY OF ARTS.

ANCIENT CLASSICS,	John N. Jordan,	(Scholarship.)
	John L. Ahern,	(Exhibition.)
MODERN LANGUAGES,	Daniel Croly,	(Scholarship.)
	Edward Horan,	(Exhibition.)
NATURAL PHILOSOPHY,	John Wilson.	(Scholarship.)
CHEMISTRY	Charles Allison,	(Scholarship.)
	Robert Black,	(Exhibition.)
MATHEMATICS,	William Stoops,	(Scholarship.)
MENTAL SCIENCE,	James J. O'Donohue,	(Scholarship.)
	Thomas G. Atkins,	(Exhibition.)

Third Year's Scholarships.

LITERATURE.	SCIENCE.
Denis Hannigan.	Annesley Somerville.
Richard Belton.	Robert Belcher.
Walter Johnson.	Samuel L. Brown.
Hamilton Benson.	William Kelly.
William Barry.	O'Byrne Crowe.

Second Year's Scholarship.

LITERATURE.	SCIENCE.
Michael Keating.	John C. Crowe.
Thomas Farrington.	William A. Cummins.
Edwin S. Donovan.	Edward A. Warren.
Edmond Wall.	John P. Sullivan.
	Morgan M'Sweeny.

First Year's Scholarships.

LITERATURE.	SCIENCE.
Clarke Irwin.	Richard A. Eaton.
	Matthew Kelly.
	John E. Laffan.

FACULTY OF LAW.

Third Year's Scholarship.

Joseph M'Auliffe.

FACULTY OF MEDICINE.

Fourth Year's Scholarships and Exhibitions.

Thomas G. Walker, Thomas D. Popham,	(Scholarships.)	George Laffan,	(Exhibition.)

Third Year's Scholarships and Exhibitions.

John J. Welply, Richard F. Starkie,	(Scholarships.)	Jephson J. Connell, Daniel Wilson, Richard Jennings, Hugh L. Donovan,	(Exhibitions.)

Appendix B.

Scholarship Examinations.

Second Year's Scholarships and Exhibitions.

Jeremiah Mullane, John C. G. Sandiford,	(Scholarships.)	John E. Walsh,	(Exhibition.)

First Year's Scholarships and Exhibitions.

LITERATURE.		SCIENCE.	
James J. Hynes,	(Scholarship.)	Thomas H. Corker,	(Scholarship.)
		Charles Pearson,	(Exhibition.)

SCHOOL OF ENGINEERING.

Third Year's Scholarship.

Daniel Connery.

Second Year's Scholarship.

Henry L. Roche.

First Year's Scholarship.

Robert Day. | William H. K. Sandiford.

No. VIII.—SESSIONAL EXAMINATIONS.

List of the Students who obtained Honors or Prizes at the Sessional Examinations.

PRIZES AND CERTIFICATES AWARDED FOR THE SESSION 1874–5.

FACULTY OF ARTS.

First Year.

GREEK,	1. James J. Riordan,	Prize.
	2. Morgan M'Sweeny, 3. John E. Laffan,	Certificates.
LATIN,	James J. Riordan,	Certificate.
ENGLISH LANGUAGE,	1. Richard Eaton,	Prize.
	2. Clarke Irwin,	„
FRENCH,	John Hosford,	Prize.
MATHEMATICS,	1. John E. Laffan,	Prize.
	2. Richard Eaton,	Certificate.

Second Year.

GREEK,	2. Edwin S. Donovan,	Prize.
	3. Thomas Farrington,	„
LATIN,	1. Edwin S. Donovan,	Prize.
	2. Thomas Farrington,	Certificate.
FRENCH,	1. Clarke Irwin,*	Prize.
	2. James J. Riordan,*	„
	3. William Fogerty,*	Certificate.
LOGIC,	2. Edwin S. Donovan,	Certificate.
	3. Thomas Farrington,	„

Third Year.

GREEK,	1. Denis Hannigan,	Prize.
	2. Richard Belton,	Certificate.
LATIN,	1. Denis Hannigan,	Prize.
	2. Richard Belton,	Certificate.
ENGLISH LITERATURE,	1. Denis Hannigan,	Prize.
	2. Samuel L. Brown,	„
HISTORY,	1. Annesley Somerville,	„
	2. Samuel L. Brown,	„
METAPHYSICS,	1. Samuel L. Brown,	„
POLITICAL ECONOMY, Equal,	Denis Hannigan, Samuel L. Brown,	„
MATHEMATICS,	1. Annesley Somerville,	„
	2. Robert T. Belcher,	„
CHEMISTRY,	—	
GEOLOGY AND MINERALOGY,	Thomas M. Corker,	„

* First Year's Students.

Appendix B.

List of the Students who obtained Honors or Prizes at the Sessional Examinations.

FACULTY OF LAW.

First Year.

JURISPRUDENCE,		John Ryan,	Prize.
ENGLISH LAW,		,,	,,

Second Year.

CIVIL LAW,		Denis Hannigan,	,,
ENGLISH LAW,		,,	,,

FACULTY OF MEDICINE.

First Year.

FRENCH,		1. James J. Hynes,	Prize.
		2. Robert E. Hadden,	,,
		3. Adam Mitchell,	Certificate.
NATURAL PHILOSOPHY,		1. James J. Hynes,	Prize.
		2. Charles G. Pearson,	,,
		3. Robert E. Hadden,	,,
CHEMISTRY,	Equal,	James J. Hynes,	,,
		Charles G. Pearson,	,,
NATURAL HISTORY,		Robert E. Hadden,	,,
ANATOMY AND PHYSIOLOGY,		1. Robert E. Hadden,	,,
		2. James J. Hynes,	,,
		3. Charles G. Pearson,	,,
		4. D. F. Barry,	Certificate.

Second Year.

PRACTICAL CHEMISTRY,		1. John C. G. Sandiford,	Prize.
		2. Jeremiah Mullane,	,,
		3. Daniel O'Connor,	,,
MATERIA MEDICA,		1. Jeremiah Mullane,	,,
		2. Michael J. M'Carthy,	,,
		3. John E. Walsh,	Certificate.
		4. John C. G. Sandiford,	,,
		5. Robert C. Black,	,,
ANATOMY AND PHYSIOLOGY,		1. Michael J. M'Carthy,	Prize.
		2. Jeremiah Mullane,	,,
		3. John E. Walsh,	Certificate.
		4. James Hanrahan,	,,
PRACTICAL ANATOMY,		1. Michael J. M'Carthy,	Prize.
		2. Jeremiah Mullane,	,,
		3. Daniel O'Connor,	Certificate.
		4. Daniel F. Barry,	,,

Third Year.

PRACTICAL ANATOMY,	Equal,	John Welply, Jephson J. Connell,	Prize.
		3. Richard Starkie,	,,
		4. Daniel Wilson,	,,
		5. Hugh L. Donovan,	Certificate.
MIDWIFERY,	Equal,	John Welply, Francis H. S. Murphy,	Prize.
		3. Daniel Wilson,	,,
		4. Richard Jennings,	Certificate.
SURGERY,		1. Francis H. S. Murphy,	Prize.
		2. John Welply,	,,
		3. William Coates,	,,

Fourth Year.

MEDICINE,	Equal,	Thomas G. Walker, Thomas D. Popham, Daniel Wilson,	Prize.
		4. Charles Good,	Certificate.
MEDICAL JURISPRUDENCE,		1. Thomas G. Walker,	Prize.
		2. Thomas D. Popham,	,,
		3. Charles Good,	,,

Appendix B.

List of the Students who obtained Honors or Prizes at the Sessional Examinations.

SCHOOL OF ENGINEERING.

First Year.

FRENCH,	1. Patrick Murphy,	Certificate.
	2. James D. Foley,	,,
MATHEMATICS,	Robert S. Day,	,,
GEOMETRICAL DRAWING,	James Swanton,	Prize.
GEOLOGY AND MINERALOGY,	Robert S. Day,	Certificate.

Third Year.

APPLIED MECHANICS,	Daniel Connery,	Prize.
ENGINEERING,	Daniel Connery,	,,
OFFICE WORK, Equal,	Daniel Connery,	,,
	Michael M'Mullen,	,,
	Christopher O'Sullivan,	,,

No. IX.—EARLY ENGLISH TEXT SOCIETY'S PRIZES; AND NEW SHAKSPERE SOCIETY'S PRIZES.

EARLY ENGLISH TEXT SOCIETY'S PRIZES,	1. Joseph Healy,	Prize.
	2. Clarke Irwin,	,,
NEW SHAKSPERE SOCIETY'S PRIZES,	Joseph Healy,	,,

No. X.

TABLE CONTAINING THE NAMES OF THE SEVERAL SUBJECTS LECTURED UPON DURING THE SESSION 1874–75, THE NUMBER OF LECTURES GIVEN ON EACH SUBJECT, AND THE TOTAL NUMBER OF STUDENTS ATTENDING THE CLASSES IN EACH SUBJECT.

Subjects Lectured on, &c.

	No. of Lectures on each Subject.	Total No. of Students attending the Classes in each Subject.
Greek,	184	25
Latin,	206	21
English Language,	29	12
,, Literature,	50	8
History,	50	8
French,	225	72
German,	17	4
Logic,	31	14
Metaphysics,	54	1
Political Economy,	36	3
Mathematics,	218	35
Natural Philosophy,	294	82
Chemistry, Theoretical,	69	70
,, Practical,	51	54
Geology and Mineralogy,	60	15
Natural History,	70	50
English Law,	72	6
Civil Law,	46	5
Anatomy and Physiology,	108	97
,, Practical,	108	96
Medicine,	58	38
Midwifery,	36	34
Surgery,	60	36
Medical Jurisprudence,	36	33
Materia Medica,	68	44
Engineering,	282	23

Appendix C.

Reports of the Professors.

APPENDIX C.

No. XI.

Reports of Professors for the Session, 1874–1875.

Form of Circular sent to each Professor.

Return to be filled up by the Professor of , and to be returned to the Registrar, so filled up, for the official information of the President, on or before the , being for the Collegiate Session

A.—As to the Course or Courses of lectures given by the Professor. 1st. Duration and extent of the Course; number of Terms. 2nd. Number of weeks of Lectures in each Term. 3rd. Number of Lectures weekly, and days and hours of Lectures.

B.—The description or title of the Course or Courses of Lectures delivered, and a general abstract of the subjects of instruction contained in the Course, and the title of the Text-books recommended.

C.—Whether the Lectures are illustrated by reference to maps, diagrams, specimens, or experiments; and a general notice of the kind of illustrations used.

D.—Whether any method of Tutorial, or other special instruction, is employed, as by setting out portions of Text-books for lessons, by themes, or exercises in composition, or problems; and whether Special Class Examinations are held, and at what time; or whether Herborization Excursions, or Field Exercises, are given.

E.—What faculties or division of Students are those attending Courses of Lectures of the Professors making the return.

F.—The number of students attending each Course—distinguishing Matriculated and Non-Matriculated Students; and the general regularity of attendance.

G.—The general conduct of Students at the Professor's Lectures; and the general state of discipline as regards the Professor's Classes.

H.—The general condition of the department of which the Professor has charge, as to supplies, fitments, cleanliness, and accommodation, for the purpose of instruction.

The Professor, in making the above returns, is requested to mark the answers with the letter designating the portion of the form of return, as above, to which each answer refers.

Signed, by order of the President,

R. J. Kenny, *Registrar.*

Faculty of Arts.

Report of the Professor of Latin.

A.—The course extended through three terms. First term seven weeks; second term ten weeks; third term six weeks. Junior class four lectures weekly; senior class, three lectures weekly; third year's class two lectures weekly.

B.—The Latin Language. Junior class: Horace, Odes, part of Book III.; Cicero, Ad Familiares, Book I., Epistles 1–7. Senior class: Virgil, Georgics, Book II.; Tacitus, Agricola, chapters 1–30. Third year's class: Cicero, Philippic II., chapters 1–17; Lucretius, part of Book III. Some instruction in Classical Archæology was also given to the more advanced students.

C.—The lectures were illustrated by references to the Art collections belonging to the College.

D.—The students prepared a portion of the text-book for each lecture. They also wrote Latin exercises in prose and verse.

E.—Students in Arts.

F.—Twenty; all matriculated. Attendance on the whole satisfactory.

G.—Satisfactory.

H.—Satisfactory.

B. LEWIS.

REPORT of the PROFESSOR of HISTORY AND ENGLISH LITERATURE.

A.—*First.* (*a.*) History, two terms. (*b.*) English Literature, two terms. (*c.*) The English Language, one term.

Second. (*a.*) History, first term, eight weeks; second term, ten weeks. (*b.*) English Literature, first term, eight weeks; second term, ten weeks. (*a.*) The English Language, second term, ten weeks.

Third. (*a.*) History, three; Mondays, Wednesdays, and Fridays, from 12 to 1 o'clock. (*b.*) English Literature, three; Mondays, Wednesdays, and Fridays from 10 to 11 o'clock. (*c.*) The English Language, three; Tuesdays and Thursdays, from 11 to 12 o'clock; Saturdays, from 10 to 11 o'clock.

B. (*a.*) History: The History of Europe from the Fall of the Roman Empire to the Close of the Fourteenth Century. (*b.*) English Literature: The History of English Literature from the death of Chaucer to the present day, with special criticisms upon, and lessons in selected works of the representative writers. Text-books recommended—Craik: *History of English Literature;* Hallam: *Introduction to the Literary History of Europe;* Taine: *History of English Literature;* Hales: *Longer English Poems.* (*c.*) The English Language: Lectures on the History of the Language: Lessons in Anglo-Saxon Grammar, and the English of Chaucer: Lessons in English Composition: a Sketch of the Literary History of the English People to the Norman Conquest. Text-books recommended: Morris's *Historical Outlines of English Accidence;* Rask: *Anglo-Saxon Grammar;* Morris and Skeat: *Specimens of Early English;* Morris: Prologue to the Canterbury Tales.

C.—(*a.*) History.—Lectures illustrated by reference to maps.

D.—(*a.*) History.—Examinations in the matter of the lectures were held from time to time. (*b.*) English Literature.—Examinations in the matter of the lectures were occasionally held; the students were frequently exercised in criticism of important poems. (*c.*) The English Language: Portions of Morris's *English Accidence,* Rask's *Anglo-Saxon Grammar,* or Morris's *Introduction* to Chaucer set from time to time. The students were exercised in paraphrasing and making analyses of portions of

F.—Arts; Engineering.

G.—Good.

H.—Good.

G. F. ARMSTRONG.

REPORT of the PROFESSOR of MODERN LANGUAGES.

A.—The duration of the three courses of French Language and Literature was of three terms. The first term comprised ten weeks, the second term eleven weeks, and the third seven. There were three lectures weekly in each class, from twelve to three.*

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* There was also a class of four students which met seventeen times to read the "William Tell" of Schiller.

Appendix C.

Reports of the Professors.

B.—The French medical class read Figuier's "Année Scientifique," translated from English into French, and had weekly lectures on the Grammar. The senior French class had weekly lectures on the Syntax and Literature, translated part of "The Vicar of Wakefield," and read Demogeot's "Littérature française," and two plays of Corneille: "Le Cid," and "Cinna."

The junior French class wrote weekly exercises, and read "L'Avare" of Molière, and extracts from Bossuet and Fénélon.

C.—The lectures were not illustrated by any maps or diagrams.

D.—The tutorial is blended with the professorial, exercises and translations being given as stated, and lectures on literature and comparative grammar being delivered once a week.

E.—The students in the classes of Modern Languages belong to the Faculties of Medicine, of Arts, and to the Engineering School.

F.—The number of students has been of 45 in the medical class; of 20 in the senior French, and of 7 in the junior French.

G.—The general conduct of the students has been most satisfactory.

H. All the supplies, attendance, &c., very good.

R. de Vericour.

Report of the Professor of Logic and Metaphysics.

A.—On Logic and Metaphysics.—1. Logic, one term; Metaphysics, two terms. 2. First term, eight weeks; second term, eleven. 3. Logic, Tuesdays and Thursdays at eleven, Saturdays at nine o'clock. Metaphysics, Tuesdays and Thursdays at one o'clock, Saturdays at ten o'clock.

B.—Logic, Deductive and Inductive—Aldrich and Fowler, parts of Mill, Baynes, Thompson, and Bain. Metaphysics: History of Philosophy and Psychology; History of Philosophy of University of France.

C.—No illustrations are used except such as are drawn or written on the board during the course of the lectures.

D.—Both the professorial and tutorial systems are used.

E.—Logic, second year's students in Arts; Metaphysics, third year's students in Arts.

F.—Logic, 14; Metaphysics, 1. All matriculated; attendance very satisfactory.

G.—Conduct of students in the class-rooms very good.

H.—Satisfactory.

G. S. Read.

Report of Professor of Mathematics.

A.—1. The courses extended over three terms.

2. In first term there were eight weeks of lectures, in the second ten, and in the third seven.

3. The lectures were delivered on Monday, Wednesday, Friday, at 12–1 for first year's students, 1–2 for second year's students, and from 2–3 for those of the third year.

During the second term the first year's class was sub-divided into two parts, the senior (or more advanced) of which attended lectures on Tuesday at 1–2 o'clock in lieu of the usual lecture on Wednesday.

B.—The subjects of lecture for the first year were, Arithmetic, Geometry, Algebra, and Trigonometry (Plane); for the second year, Analytical and Spherical Trigonometry, Theory of Equations, Plane Co-ordinate Geometry, Differential and Integral Calculus; for the third year the subjects were Geometry of three dimensions, Differential Equations, and Integral Calculus.

The text-books used or recommended to students attending the lectures were, Wilson's "Elementary Geometry" (2nd edition), Euclid (Todhunter's or Pott's edition), Todhunter's "Algebra," Todhunter's "Algebra for Beginners," Todhunter's "Trigonometry," Todhunter's "Trigonometry for Beginners," Todhunter's "Spherical Trigonometry," Todhunter's "Theory of Equations," Todhunter's or Salmon's "Conic Sections," Williamson's "Differential Calculus," Todhunter's or Williamson's "Integral Calculus." Salmon's, Gregory's, Aldis's or Frost and Wolstenholme's "Solid Geometry," Boole's "Differential Equations."

C.—In each class problems were set at each lecture. These were afterwards done at lecture. Besides the figures on the board no other kinds of illustrations were used.

D.—Examinations were held constantly on prescribed parts of the lectures, and sometimes of the text-books. Written examinations were also held at different times during the session, at natural sub-divisions in the course.

E.—The students attending the lectures belonged to the Faculty of Arts, including the School of Engineering.

F.—The students were all matriculated.

The number attending the	first year's	class was	22
do.	second	do.	11
do.	third	do.	2

G. The conduct of the students was excellent. The attendance at lectures was fairly regular.

H. The general condition of the department, &c., is satisfactory.

C. Niven.

Report of the Professor of Natural Philosophy.

A.—Six courses of lectures, each three terms, eight weeks in the first, ten in the second, seven in the third. In the senior class of experimental physics, and in the honor class of Mathematical Physics, three lectures were delivered in each week, in each of the other classes two lectures weekly.

B.—In the classes of Experimental Physics the subjects were:—The Elements of Mechanics and Hydrostatics, Heat, Light, Electricity, and Acoustics. In Mathematical Physics—Mechanics, Optics, and Astronomy. In Engineering—Physics, Practical Mechanics, the Principles of Mechanism, Thermodynamics. Text-books—Ganôt's "Traité de Physique," Everett's translation of Deschanel's "Physics," Todhunter's "Statics," Tait and Steele's "Dynamics," Routh's "Rigid Dynamics," Parkinson's "Optics," Godfrey's "Astronomy," Twisden's "Practical Mechanics," Goodeve's "Principles of Mechanism," Maxwell's "Treatise on Heat."

C.—The lectures were illustrated by experiments and diagrams.

D.—In Mathematical and Engineering Physics the tutorial method of instruction was chiefly used.

E.—The honor course in Experimental Physics was attended by third-year students in Arts; senior class by students of second year in Arts and Engineering, junior by medical students of the first year; Mathematical Physics by students of third year in Arts and Engineering; Engineering Physics by students of third year in Engineering.

F.—Honor Physics, 5; senior class, 17; junior, 45; Mathematical

Physics (Honor class), 4; Ordinary class, 5; Engineering Physics, 6. The attendance was regular.

G.—The conduct of the students was satisfactory.

H.—The arrangements for instruction in Physics are at present too limited, but steps are being taken for increased accommodation which it is hoped will add considerably to the efficiency of this department.

JOHN ENGLAND.

REPORT of the PROFESSOR of CHEMISTRY.

A.—Two courses of lectures, one on Theoretical and the other on Practical Chemistry. 1. Theoretical Course, three terms, 71 lectures; Practical Course, two and a half terms, 51 lectures. 3. Theoretical Course, three lectures weekly, on Mondays, Wednesdays, and Fridays, from 11 to 12. Practical course, six lectures weekly at 2 o'clock every day.

B.—First Course—Theoretical Chemistry, both Inorganic and Organic. Second Course—Practical Chemistry; text-books—Roscoe, Regnault, Galloway's "Qualitative Analysis," Naquet's "Chemistry," Armstrong's "Organic Chemistry."

C.—Illustrated by diagrams, specimens, and experiments.

D.—Both the tutorial and professorial methods were employed.

E.—Students of the faculties of Arts, Engineering, and Medicine, attended both courses.

F.—In the first course, 61 matriculated and 10 non-matriculated; in the second 53 matriculated and 3 non-matriculated. Attendance very good.

G.—General conduct and discipline excellent.

H.—Very good.

MAXWELL SIMPSON.

REPORT of the PROFESSOR of GEOLOGY and MINERALOGY.

A.—The course of lectures delivered by the Professor extended over the first and second terms, the number of weeks in the first term being eight, and in the second ten. Three lectures were given each week, the days and hours being Tuesdays and Thursdays from 2 to 3, P.M., and Saturdays from 12 to 1, P.M. Six extra lectures were also given on other days, making a total of 60.

B.—The course included Physical Geography, Mineralogy, Geology, and Palæontology. The text-books recommended were—Lyell's "Students' Elements of Geology," Lyell's "Principles of Geology," Jukes' "Manual of Geology," Nicholson's "Palæontology," Herschell's "Physical Geography," Somerville's "Physical Geography," and Nicol's "Elements of Mineralogy."

C.—The lectures were illustrated by maps, sections, diagrams, specimens, and models.

D.—The method of instruction was professorial; practical instruction was also given in the field in Geology and Palæontology.

E.—The students attending the course were third year's Arts and first year's Engineering students.

F.—The number attending was fifteen, all being matriculated. The general attendance was good.

G.—The conduct of the students in the class-room was good, and the discipline very satisfactory.

H.—Concerning supplies, fitments, cleanliness, and accommodation, these are such as to meet the requirements of the Professor.

ROBERT HARKNESS.

REPORT of the PROFESSOR of NATURAL HISTORY.

Session 1874-5.

A.—1. Three terms, 72 lectures. 2. Seven, eleven, and seven weeks, respectively. 3. Monday, Wednesday, and Friday, at 3, P.M.

B.—Zoology and Botany. The Morphology and Classification of Plants and Animals. Huxley's Manual of the Anatomy of Vertebrated Animals, Rolleston's Forms of Animal Life, and Henfrey's Elementary Course of Botany.

C.—Reference was made to diagrams and specimens.

D.—The students were urged to read set portions of text-books as a preparation for the lectures of the Professor. A few examinations were held, at no definite periods, throughout the course. Excursions were given at the end of the session.

E.—Students of the third year in Arts, and of the first in Medicine.

F.—Seven students in Arts, 35 in Medicine, and 9 non-matriculated, in all 51 students. Two were disqualified for insufficient attendance, 4 attended diligently, the remainder duly.

G.—Tolerable.

H.—As to cleanliness there is little occasion for complaint, but many educational appliances are needed for the use of the class.

J. R. GREENE.

FACULTY OF LAW.

REPORT of the PROFESSOR of JURISPRUDENCE and POLITICAL ECONOMY.

A.—Political Economy, 2 terms, 36 lectures; Civil Law, 2 terms, 22 lectures.

B.—In Political Economy the chief text-book was J. S. Mill's "Political Economy;" in Jurisprudence, Maine's "Ancient Law;" in Civil Law, Sandar's "Justinian."

C.—The subjects do not admit of such illustrations as are mentioned in the question.

D.—In Political Economy the instruction was largely tutorial; setting portions of text-book constantly as lessons, with class examinations almost daily.

E.—In Political Economy the students were of the third year's Arts, in Jurisprudence of first year's Law, and the sole student in Civil Law was of the second year's Law, as also of the third year's Arts.

F.—In Political Economy, 3 students; in Jurisprudence, 4 students; in Civil Law, 1 student.

G.—Good.

H.—Satisfactory.

R. H. MILLS.

REPORT of the PROFESSOR of ENGLISH LAW.

A.—In the first term of the session the lectures were commenced on November 30, and continued to December 19 (both inclusive); in the second term the lectures were commenced on February 18, and continued to March 10 (both inclusive); not more than four lectures were delivered to any class in each week. In selecting the periods, regard was necessarily had to the times at which students must attend the Professors of the King's Inns, and of the Incorporated Society in Dublin.

Appendix C.

Reports of the Professors.

B.—For the first year's class the Law of Real Property is the subject of instruction, following the arrangement of Mr. Joshua Williams' work, which is used as the text-book. The second year's class was occupied during the winter term with the subjects of Equity (text-book—Snell) and Bankruptcy; in the following term with the Law of Personal Property (text-book—Williams), the Law of Contracts (text-book—J. W. Smith), and Personal Actions. In the lectures delivered to the third year's class, Pleading, the nature and constitution of Courts, and their modes of procedure with reference particularly to Criminal Law were treated of, Stephens' Blackstone (vols. iii., iv.) being used as the text-book.

C.—The lectures to each class are illustrated by references to other approved works besides the text-books, and by cases and precedents. Suitable reading on each point treated of is suggested.

D.—The students are invited to prepare for the courses of instruction by being informed beforehand of the plan intended to be pursued, and from time to time are questioned upon the subjects treated of in the lectures.

E.—The students referred to are attending lectures in the Faculty of Law.

F.—Six students attended; 1 was prevented by illness from attending the prescribed number of lectures (five-sixths of twenty-four); the others attended 22 or upwards.

G.—The general conduct of those attending was unexceptionally good.

H.—In regard to the general condition of the department, I have to report that frequently, no class-room being disengaged, I am on such occasions obliged to deliver my lectures in the private apartment allotted to two other Professors and myself. The amount allocated for the supply of books for this department is very small; such a sum as £6 or thereabouts in a year is inadequate to keep up a fair supply of law books to the library.

MARK S. O'SHAUGHNESSY.

FACULTY OF MEDICINE.

REPORT of the PROFESSOR of ANATOMY and PHYSIOLOGY.

A.—Two courses delivered daily (Saturday excepted) during the first, second, and part of the third term. Anatomy and Physiology at one o'clock; Anatomical Demonstrations at twelve o'clock. The class roll was called at 217 lectures and demonstrations.

B.—The course of Anatomy and Physiology comprehended the following subjects:—1. Nature of life and organization; general description of the vital functions; special description of the textures of the human frame; development of tissues and other branches of histology; composition of the fluids and of the secretions, &c. 2. Physiological anatomy of the organs of support and locomotion, circulation, respiration, digestion, chylification, absorption, glandular secretion, excretion, reproduction; the brain and its membranes; spinal cord and membranes; ganglia and nerves; the organs of smell, vision and taste, &c. 3. Physiology of the foregoing subjects. The course of Anatomical Demonstrations included descriptions of the bones, joints, muscles, vessels, nerves, and surgical regions, &c. The dissections performed by the students were superintended by the Professor and Demonstrators of Anatomy.

Books chiefly used—Todd, Bowman, and Beale; Carpenter's, Kirke's, Dalton's, and Valentin's works on Physiology; latest editions of Quain's "Anatomy," Gray's "Anatomy," Wilson's, Ellis's "Demonstrations," &c. Kölliker, Gerber on Microscopic Anatomy.

C.—Lectures illustrated by recent and prepared dissections, charts, plates, diagrams, preparations from museum, specimens, models, &c.

D.—The students were examined *viva voce* on subjects treated of in the lectures.

E.—Students of Medicine.

F.—In Anatomy and Physiology class, matriculated students, 87; non-matriculated, 11. In Practical Anatomy, 96 students.

G.—General conduct of students very good.

H.—The anatomical preparations, plates and charts, are good, but there is great necessity for additional means of illustrating the lectures. There is much need of a proper anatomical museum, with collections in osteology, and all other branches of anatomy.

It would be most desirable that the dissecting-room should be enlarged, as the accommodation is not adequate to the number engaged in Practical Anatomy.

J. Henry Corbett.

Report of the Acting Professor of Materia Medica and Therapeutics.

A.—1. Six months. 2. Sixty-eight lectures. 3. Tuesdays and Thursdays, from 3 to 4 o'clock, P.M., and Saturdays from 12 o'clock, A.M., to 1 o'clock, P.M.

B.—Materia Medica and Therapeutics, Classification of Medicines, Physiological and Therapeutical actions, Posology, Formulation. No particular text-books recommended. Those in the students' hands were —Neligan's "Medicine," by Macnamara, Smith's "Commentary on the British Pharmacopœia," Garrod's "Manual of Materia Medica," Ringer's "Therapeutics," &c.

C.—Specimens of the drugs named in B. P. Dry specimens of medical plants. Recent specimens of do., when obtainable. Verification of the purity of the drugs in the museum by the application of the tests given in the B. P., and of other tests. The application of the microscope for a similar purpose, with occasional experiments on living animals.

D.—Class examinations were held on Saturdays after lecture.

E.—Faculty of Medicine.

F.—Nothing could be better.

G.—The present Preparation Room would require to be much enlarged, or, what would be better still, a Special Lecture Room, with small laboratory and museum attached, should be provided. A few microscopes are also much wanted.

M. O'Keeffe.

Report of Professor of Midwifery.

A.—Courses of lectures on Midwifery. 1. Six months, November to April. 2. About sixty lectures in the course. 3. Three lectures weekly, Monday, Wednesday, and Friday, at four o'clock.

B.—Midwifery. Physiology and pathology of reproduction and gestation. Parturition in its various bearings, theoretical and practical.

C.—Diagrams, casts, models, anatomical and other preparations, &c.

E.—Students of the Faculty of Medicine.

F.—Matriculated; non-matriculated. General attendance good.

G.—General conduct of the students very good.

H.—Supply of preparations, &c., for the illustration of the lectures far from complete.

J. (R.) Harvey.

REPORT of the PROFESSOR of PRACTICE OF PHYSIC.

A.—A course of lectures on the Practice of Physic, beginning on the 1st day of November, ending 30th of April, divided into three terms; the first ending 20th of December, the other two of uncertain duration; number of weeks uncertain; 3 lectures weekly, from 3 to 4 o'clock, Monday, Wednesday, and Friday.

B.—All subjects embraced under the head of Practical Medicine or Internal Pathology.

C.—Illustrated by maps and morbid specimens.

D.—The students are occasionally examined on the subjects of previous lectures.

E.—Students of the Medical Faculty solely.

F.—The number of students attending is 30 matriculated, 3 non-matriculated. The attendance and conduct was very good.

G.—Conduct and discipline very good.

H.—There is a great want of pathological specimens since the burning at the College.

DENIS C. O'CONNOR.

REPORT of the PROFESSOR of SURGERY.

A.—The course of lectures consisted of three terms; three lectures weekly, on Tuesdays and Thursdays from four until five o'clock, and on Saturdays from one until two o'clock.

B.—Surgery. Theory and practice of Surgery and Operative Surgery. Erichsen's Surgery, Bryant's practice of Surgery, Paget's lectures on Surgical Pathology, Pirrie's Surgery.

C.—Diagrams, specimens, the microscope, and operations on the subject.

D.—Occasional class examinations.

E.—Medicine.

F.—Thirty-six (one was not matriculated).

G.—The general conduct and discipline of the class was excellent in all respects.

H.—The department is miserable in all respects, as regards affording instruction by illustrations to the lectures, and would require a considerable outlay to make good the deficiency.

W. K. TANNER, M.D.

REPORT of PROFESSOR of ENGLISH LAW as to LEGAL portion of the COURSE on MEDICAL JURISPRUDENCE.

A.—During the first term twelve lectures were delivered. The period so occupied extended from November 28, to December 17th; no more than four lectures were delivered in any week.

B.—The subjects treated of were divided under the heads of, (i), Questions affecting the civil rights or social duties of individuals, including the connexion of the subject with the law relating to injuries to property, and injuries to the person; (ii), Questions affecting the preservation of individuals, and of men collected into communities. Various legal authorities were referred to, and recent legislation as to public health, lunacy &c., explained.

C. D.—Illustrative cases were detailed and commented upon, and their bearing explained. The treatment of particular branches by such writers as Casper, Beck, Taylor, Paris, and Fonblanque, Winslow, &c., was indicated.

E.—The students of the class belong to the Faculty of Medicine.

Appendix C.

Reports of the Professors.

F.—Of 33 students forming the class, 27 attended not less than 10 out of the 12 lectures delivered; the minimum number (8) required was attended by only one student.

G.—The conduct of those present was perfectly satisfactory to me,

H.—I have no requirement to make under this head.

MARK. S. O'SHAUGHNESSY.

REPORT of the LECTURER on MEDICAL JURISPRUDENCE.

Medical portion of course.

A.—1. One term of two months.

2. Eight weeks.

3. Three, Tuesday, Thursday, and Friday, at one o'clock, P.M.

B.—Medical Jurisprudence. Examination of body found dead—Putrescence, internal and external—Forms of violent death, signs of, external and internal—Wounds—Stains. Hair.

Medical bearings of Infanticide, disputed sexual relations, and insanity. Toxicology.

C.—Exhibition of the various poisons, and recent specimens of the most important indigenous poisonous plants—Experiments made with the most important and commonly used poisons on animals, and analyses of the contents of the stomach, &c., to detect the poison and recover it when possible.

D.—Not considered necessary.

E.—Faculty of Medicine.

F.—31 matriculated, 2 non-matriculated.

G.—Most excellent.

H.—It is impossible to properly teach this branch of medical study without a special laboratory sufficiently large to accommodate the class.

MATTHIAS O'KEEFFE.

SCHOOL OF ENGINEERING.

REPORT of PROFESSOR of CIVIL ENGINEERING.

A.—1. Each course extends through three terms. 2. First term, 8 weeks; second term, 11 weeks; third term, 7 weeks. 3. Three lectures per week in each course. Students of first year, Monday, Wednesday, Friday, 10, A.M.; second year, Tuesday, Thursday, Saturday, 11, A.M.; third year, Monday, Wednesday, Friday, 12, noon. Students of first, second, and third years in Office. Office open Tuesday, Thursday, Saturday, from 10, A.M. to 2, P.M.

Total number of lectures :—

To students of first year, . . .	70
„ second year, . . .	70
„ third year, . . .	72
Office, ...	70
Total, ...	282

B.—*First year.*—Descriptive Geometry; Orthographic Projection; Shadows; Isometric Projection; Perspective; Geometry of the Oblique Bridge; Principles of Architecture. Text-books :—Hall's "Descriptive Geometry"; "Engineer and Machinist's Drawing Book"; Buck on the Oblique Bridge; Rickman's "Architecture." *Second year.*—Surveying, Levelling, and Mensuration. Text-books :—Rankine's "Civil Engineering"; Cotton's "Manual of Railway Engineering." *Third year.*—Materials used in Construction; Strength of Materials; Stresses in Structures;

Principles of Construction of Bridges, Roads, Railways, Canals; Hydraulic Engineering; Supply of Towns with Water. Text-books :—Rankine's "Civil Engineering"; Stoney's "Theory of Strains in Girders"; Downing's "Hydraulics"; references to many of the books in the Library. *Drawing Office.*—First year students are chiefly employed in drawing the problems given at lectures, and easy examples of their application, those of the second and third year in making working drawings of examples of the subjects of lectures, and in mapping.

C.—Illustrated by reference to maps, drawings, and instruments.

D.—Both the tutorial and professorial methods of instruction are adopted, according to the subject of the lecture. Instruction in the field is given.

E.—Students in the department of Civil Engineering.

F.—Students of first year, .	12	(all Matriculated)
" second year, .	4	"
" third year, .	6	"
In Office only, . . .	2	
	24	
Subtract 2 attending a second time in first year, . .	2	
Total, ...	22	

The majority of the students have attended regularly.

G.—Conduct of students generally good.

H.—The condition of the department has undergone little change during the last few years.

ALEXANDER JACK.

No. XII.—REPORT OF LIBRARIAN FOR SESSION 1874–75.

The number of volumes in the Library at the date of this Report is 21,136. They may be classified as follows:—

Mathematics, Pure, . . .	815	English Language and Literature,	1,487
Mathematics, Mixed, . .	726	European do. do. .	1,678
Chemistry, ...	1,040	Celtic do. do. .	66
Geology, &c., ...	717	History, Antiquities, &c., . .	2,827
Botany and Zoölogy, ...	1,723	Biography, ...	563
Medical Sciences, ...	2,576	Geography, Voyages, Travels, &c.,	614
Theology, Ecclesiastical History, &c.,	332	Engineering, ...	544
Logic and Metaphysics, . .	444	Agriculture, ...	222
Jurisprudence and Political Economy, ...	596	Fine Arts, ...	200
Education, ...	219	Bibliography, ...	99
Law, ...	939	Encyclopædias, ...	634
Ancient Classical Literature, .	1,987	Total, ...	21,136
Sanscrit and other Eastern Languages, ...	88	Increase over last year, . .	210

Of these 210 volumes, 12 were presented; the remainder were purchased by the Council of the College.

The library has suffered no loss, in any description of property, since date of last report.

Discipline is excellent. There was no complaint of any kind during the session.

Heating and ventilation satisfactory.

One hundred and twenty volumes have been bound during the year.

MATTHIAS O'KEEFFE, *Librarian.*

Queen's College, Cork, May 22nd, 1875.

No. XIII.—BURSAR'S ANNUAL ACCOUNT OF THE RECEIPTS AND EXPENDITURE OF QUEEN'S COLLEGE, CORK.

Appendix C.

General Abstract of the Receipts and Expenditure of the College, from the 1st April, 1874, to the 31st March, 1875.

DR.	£	s.	d.
To Balance on 1st April, 1874,	1,372	14	11
„ Amounts received from Paymaster of Civil Services—			
Endowment (less Income Tax),	6,952	7	4
Special Parliamentary Grant in aid of Salaries of Professors,	497	17	0
Additional Parliamentary Grant for maintenance of College,	1,000	0	0
„ Amount of College Fees and Fines,	82	12	0
„ Dividend on £1,089, New Three Per Cent. Stock,	10	14	2
Total,	£9,921	15	5

CR.	£	s.	d.
By Amount paid for Salaries—			
President, Professors, and Officers,	5,115	7	4
Scholarships, Exhibitions, and Prizes,	1,464	11	8
Minor Officers, Porters, and Servants,	491	8	0
„ Payments on account of Special Grant,	497	6	6
„ Payments on account of Additional Grant, and College Fees and Fines,	1,020	1	11½
„ Purchase of £1,089, New Three Per Cent. Stock,	1,000	0	0
„ Balance on 31st March, 1875,	332	19	11½
Total,	£9,921	15	5

ACCOUNT of the EXPENDITURE of the ADDITIONAL PARLIAMENTARY GRANT of £1,000 for MAINTENANCE of the COLLEGE, and of the COLLEGE FEES and FINES for the YEAR ending 31st MARCH, 1875.

DR.	£	s.	d.
To Amount received from Paymaster-General,	1,000	0	0
„ „ College Fees and Fines,	82	12	0
Total,	£1,082	12	0

CR.				£	s.	d.
By Amount expended on the Library—						
Ancient and Modern Languages, &c.,	£30	3	1			
Mathematical and Physical Sciences,	18	17	8			
Natural Sciences,	36	19	2			
Engineering,	1	8	7			
Medical Sciences,	27	9	9			
Mental and Legal Sciences,	16	13	11			
Binding,	19	3	10			
	£150	16	0	150	16	0
By Amount expended for Apparatus, Diagrams, Materials, Museum Specimens—						
Chemical Laboratory,	£120	11	10			
Physical Cabinet,	15	10	1			
Engineering—Diagrams, &c.,	23	15	3			
Medical Faculty—Apparatus, &c.,	44	14	7			
	£204	11	9	204	11	9
By Amount expended on Natural History Museum,				1	10	0
„ „ Heating and Lighting,				311	5	2
„ „ Printing, Stationery, &c.,				130	19	2
„ „ Botanic Garden and College Grounds,				112	16	4
„ Miscellaneous Expenditure—						
Porter's Clothing,	£75	9	8½			
Water Supply,	11	11	0			
Postage,	4	2	2			
Incidentals,	17	0	8			
	£108	3	6½	108	3	6½
By Balance,				62	10	9½
				£1,082	12	0

(Signed), JOHN ENGLAND, M.A., *Bursar.*

5th April, 1875.

APPENDIX D.

No. XIV.

Faculty of Arts.

SESSIONAL EXAMINATIONS—FIRST YEAR.

Greek.

Morning.

Translate :—

(A.) Euripides—*Alcestis*, vv: 280–307.

ΑΛ. Ἄδμηθ', ὁρᾷς γὰρ τἀμὰ πράγμαθ' ὡς ἔχει,
λέξαι θέλω σοι πρὶν θανεῖν ἃ βούλομαι.
ἐγώ σε πρεσβεύουσα κἀντὶ τῆς ἐμῆς
ψυχῆς καταστήσασα φῶς τόδ' εἰσορᾶν,
θνήσκω, παρόν μοι μὴ θανεῖν ὑπὲρ σέθεν,
ἀλλ' ἄνδρα τε σχεῖν θεσσαλῶν ὃν ἤθελον,
καὶ δῶμα ναίειν ὄλβιον τυραννίδι,
οὐκ ἠθέλησα ζῆν ἀποσπασθεῖσά σου
ξὺν παισὶν ὀρφανοῖσιν· οὐδ' ἐφεισάμην
ἥβης ἔχουσα δῶρ', ἐν οἷς ἐτερπόμην.
καίτοι σ' ὁ φύσας χἠ τεκοῦσα προὔδοσαν,
καλῶς μὲν αὐτοῖς κατθανεῖν ἧκον βίου,
καλῶς δὲ σῶσαι παῖδα κεὐκλεῶς θανεῖν.
μόνος γὰρ αὐτοῖς ἦσθα, κοὔτις ἐλπὶς ἦν
σοῦ κατθανόντος ἄλλα φιτύσειν τέκνα.
κἀγώ τ' ἂν ἔζων καὶ σὺ τὸν λοιπὸν χρόνον,
κοὐκ ἂν μονωθεὶς σῆς δάμαρτος ἔστενες,
καὶ παῖδας ὠρφάνευες. ἀλλὰ ταῦτα μὲν
θεῶν τις ἐξέπραξεν ὥσθ' οὕτως ἔχειν.
εἶεν· σύ νύν μοι τῶνδ' ἀπόμνησαι χάριν·
αἰτήσομαι γάρ σ' ἀξίαν μὲν οὔποτε·
ψυχῆς γὰρ οὐδέν ἐστι τιμιώτερον·
δίκαια δ', ὡς φήσεις σύ· τούσδε γὰρ φιλεῖς
οὐχ ἧσσον ἢ 'γὼ παῖδας, εἴπερ εὖ φρονεῖς·
τούτους ἀνάσχου δεσπότας ἐμῶν δόμων,
καὶ μὴ 'πιγήμῃς τοῖσδε μητρυιὰν τέκνοις,
ἥτις κακίων οὖσ' ἐμοῦ γυνὴ φθόνῳ
τοῖς σοῖσι κἀμοῖς παισὶ χεῖρα προσβαλεῖ.

1. Parse *fully*:—*καταστήσασα, παρόν, σέθεν; ἐφεισάμην, προὔδοσαν, ἔζων, ἀπόμνησαι, ἀνάσχου, 'πιγήμῃς, προσβαλεῖ.*

2. Explain the construction of *καλῶς μὲν . . . ἧκον βίου*; and of *αἰτήσομαι γάρ σ' ἀξίαν.* What is the force of *γάρ*?

3. Define the term *crasis*, and point out examples of it in the extract.

Translate into Greek :—

1. The boy should practise temperance.
2. They asked him whether he treated his slaves well.
3. He was suffering from the same disease as Cyrus.
4. If he had acted insolently towards us, he would not have escaped with impunity.
5. He went away, that he might not see the battle.
6. The soldiers asked their general for money.
7. He said that, if he found the man at home, he would kill him.

Translate :—

(B.) XENOPHON—*Memorabilia*, Book II., c. iii., 18, 19.

Νῦν μὲν γὰρ οὕτως, ἔφη, διάκεισθον, ὥσπερ εἰ τὼ χεῖρε, ἃς ὁ θεὸς ἐπὶ τὸ συλλαμβάνειν ἀλλήλαιν ἐποίησεν, ἀφεμένω τούτου τράποιντο πρὸς τὸ διακωλύειν ἀλλήλω, ἢ εἰ τὼ πόδε θείᾳ μοίρᾳ πεποιημένω πρὸς τὸ συνεργεῖν ἀλλήλοιν ἀμελήσαντε τούτου ἐμποδίζοιεν ἀλλήλω. οὐκ ἂν πολλὴ ἀμαθία εἴη καὶ κακοδαιμονία, τοῖς ἐπ' ὠφελείᾳ πεποιημένοις ἐπὶ βλάβῃ χρῆσθαι; καὶ μὴν ἀδελφώ γε, ὡς ἐμοὶ δοκεῖ, ὁ θεὸς ἐποίησεν ἐπὶ μείζονι ὠφελείᾳ ἀλλήλοιν, ἢ χεῖρέ τε καὶ πόδε καὶ ὀφθαλμὼ καὶ τἄλλα, ὅσα ἀδελφὰ ἔφυσεν ἀνθρώποις. χεῖρες μὲν γὰρ, εἰ δέοι αὐτὰς τὰ πλέον ὀργυιᾶς διέχοντα ἅμα ποιῆσαι, οὐκ ἂν δύναιντο, πόδες δὲ οὐδ' ἂν ἐπὶ τὰ ὀργυιὰν διέχοντα ἔλθοιεν ἅμα, ὀφθαλμοὶ δὲ, οἱ καὶ δοκοῦντες ἐπὶ πλεῖστον ἐξικνεῖσθαι, οὐδ' ἂν τῶν ἔτι ἐγγυτέρω ὄντων τὰ ἔμπροσθεν ἅμα καὶ τὰ ὄπισθεν ἰδεῖν δύναιντο, ἀδελφὼ δὲ, φίλω ὄντε, καὶ πολὺ διεστῶτε πράττετον ἅμα καὶ τὰ ἐπ' ὠφελείᾳ ἀλλήλοιν.

1. Parse *fully* :—ἀλλήλαιν, ἀφεμένω, τράποιντο, ἔλθοιεν, διεστῶτε.
2. In what case are the words χεῖρέ τε καὶ πόδε καὶ ὀφθαλμὼ ; and also τῶν ἔτι ἐγγυτέρω ὄντων?
3. Derive μοῖρα, ἀμαθία, βλάβη, ὀφθαλμός.
4. Distinguish in meaning between ἐπί with the genitive, dative, and accusative cases.

LATIN.

Examiner, Professor LEWIS.

Translate :—

HORACE—*Odes*, iii., 29.

Tyrrhena regum progenies, tibi
Non ante verso lene merum cado,
    Cum flore, Maecenas, rosarum, et
        Pressa tuis balanus capillis

Iamdudum apud me est: eripe te morae,
Ne semper udum Tibur, et Aesulae
    Declive contempleris arvum, et
        Telegoni iuga parricidae.

Fastidiosam desere copiam et
Molem propinquam nubibus arduis;
    Omitte mirari beatae
        Fumum et opes strepitumque Romae.

CICERO—*Ad Familiares*, I., 4.

A. d. XVI. Kal. Febr. cum in senatu pulcherrime staremus, quod iam illam sententiam Bibuli de tribus legatis pridie eius dici fregeramus unumque certamen esset relictum, sententia Volcatii, res ab adversariis nostris extracta est variis calumniis. Causam enim frequenti senatu, non magna varietate, magnaque invidia eorum, qui a te causam regiam alio traferebant, obtinebamus. Eo die acerbum habuimus Curionem, Bibulum multo iustiorem, paene etiam amicum. Caninius et Cato negarunt se legem ullam ante comitia esse laturos. Senatus haberi ante Kalendas Febr. per legem Pupiam, id quod scis, non potest, neque mense Febr. toto nisi perfectis aut reiectis legationibus.

1. Give some account of Maecenas, Alyattes, and Cato the Censor.

2. Explain the following words:—*Iapyx, cratera, lignum, cyathus, trochus, consors.*

3. Draw a map of Italy, and mark in it Venusia, Formiae, Algidus, Tibur, Aufidus, and Lanuvium.

4. State fully the circumstances to which Cicero refers in the preceding extract.

5. What is the meaning of *senatus auctoritas?*

6. How did the Romans reckon the days of the month?

Translate into Latin:—

His perseverance is as great as his fury.
The Senate decrees that the Consuls should levy troops.
He persuades him to return to his mother.
He demands that troops should be levied.
There are some who lie.
He exhorted his soldiers to fight bravely.
He begged and prayed Dolabella to do this.

Translate into Latin elegiacs:—

And the day which took war, took from thee anger of war,
And together each party bore gifts to the temples.

I compose not these works with talent, I compose not these works with art;
My matter is ingenious from peculiar evils.

But confine me neither with fetters nor with chains;
I shall be kept bound by firm love of thee.

THE ENGLISH LANGUAGE AND ENGLISH LITERATURE.

Examiner, Professor ARMSTRONG.

1. Name the three divisions of the *morphological* classification of languages, and give examples of words representing the three stages in the growth of languages which correspond to these three divisions.

2. Distinguish between a *language* and a *dialect*, and give examples of the changes of sounds which have arisen from dialectic growth.

3. State to what group of allied languages English belongs, and name the principal members of that group.

4. Explain the names *Teuton* and *Welsh.*

5. Name in chronological order the principal foreign influences to which the language of the Ænglisc has been subjected.—Give examples of words introduced into the language under each of these influences, and explain the essential distinctions between Anglo-Saxon and Modern English.

6. Enumerate the principal Italic or Romanic languages, and describe some of the peculiarities of that Romance dialect which has exercised the largest influence upon English.

7. Give examples of the *indefinite* and *definite* forms of A. S. adjectives.

8. Decline the A. S. personal pronouns.

9. Give a brief account of the Old English dialects before and after the Norman Conquest.

10. Out of which of the Old English dialects has Modern English sprung?

Over what districts was this dialect spoken, and in what modern counties are some of its older peculiarities still traceable?

11. Paraphrase, and make an analysis of the following passage, explaining its metrical structure, and commenting upon its grammatical peculiarities:—

> "His typet was ay farsed ful of knyfes
> And pynnes for to yive faire wyfes,
> And certaynly he hadde a mery noote;
> Wel couthe he synge and pleyen on a rote.
> Of yeddynges he bar utterly the prys.
> His nekke whit was as the flour-de-lys."

12. Give a brief account of the poetry of the English people prior to the Norman Conquest.

MODERN LANGUAGES.*

Examiner, Professor DE VERICOUR.

Translate into French:—

I. Study nourishes youth, amuses old age, adorns prosperity, and comforts us in adversity. Do you not think that it is greater to overcome one's passions than to conquer whole nations? Vice often deceives us under the form of virtue. The most beautiful flowers last but a short time; the least rain tarnishes them, the wind withers them, and the sun scorches them. They who never were acquainted with adversity have seen the world but on one side. Employ all the days of your youth so that you may fulfil honourably all the duties of your station. Men without passions, without virtues, and without vices, have but one feeling—vanity badly disguised. However wicked men may be they would not dare to appear the enemies of virtue. Even the most savage animals afford us examples of gratitude. If we do not want to do good we should not prevent others from doing so. Because one man is stronger or most dexterous than another, it does not follow that he has a better cause.

II. Immediately after the conclusion of the peace, the French forces left Scotland, as much to their own satisfaction as to that of the nation. The Scots soon found that the calling to their assistance a people more powerful than themselves, was a dangerous expedient. They beheld, with the utmost impatience, those who had come to protect the kingdom taking upon them to command it; and on many occasions they repented the rash invitation which they had given. The peculiar genius of the French nation heightened this disgust, and prepared the Scots to throw off the yoke before they had well begun to feel it. The French were, in that age, what they are at present—one of the most polished nations in Europe. But it is to be observed, in all their expeditions into foreign countries, whether towards the south or north, that their manners have been remarkably incompatible with the manners of every other people. Barbarians are tenacious of their own customs, because they want knowledge and taste to discover the reasonableness and propriety of customs which differ from them.—ROBERTSON.

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* N.B.—This paper was set to students in Arts of first, second, and third years' standing, and to students of Medicine and Engineering of first year's standing.

Appendix D.

Sessional Examinations.

1. State the use of the imperfect and of the preterite in French, comparing it to the Latin, and illustrate it by examples.

2. Translate into French the following sentences :—He is to read ; I have just seen the Queen ; you should have stopped.

3. When must you translate, it is, by "c'est," and when by "il est"?

4. What is understood by the word *renaissance?*

5. Give a brief outline of the pulpit eloquence in France during the reign of Louis XIV.

6. Explain what is understood by classical and romantic literature.

MATHEMATICS.

Examiner, Professor NIVEN.

PASS PAPER.

N.B.—The following Paper was common to first year's students of Arts and Engineering.

1. Define parallel lines and prove that if a straight line cut two parallel straight lines it makes the exterior angle equal to the interior and opposite angle.

2. If a straight line be divided into two parts the square on the whole line is equal to the sum of the squares on its parts, together with twice the rectangle contained by the parts.

3. Prove that the chord of intersection of two circles is bisected at right angles by the line which joins their centres.

Interpret this result when the two circles touch.

If two circles touch internally in A and ABD, ACE be two chords cutting the interior circle in B, C and the other in D,E, show that BC is parallel to DE.

4. Similar triangles are in the duplicate ratio of their homologous sides.

5. Define, and prove the rule for, the multiplication of vulgar fractions.

Given $x = \dfrac{g}{\frac{4}{3}\pi\rho r}$ where $g = 32$ feet, $\pi = \dfrac{22}{7}$, $\rho = 5.5$, $r = 4000$ miles, find x, correct to 8 decimal places.

6. Prove the rule for finding the G. C. M. of two quantities.

Reduce the fraction $\dfrac{4x^3 - 3x - 1}{2x^4 + x^3 - 2x - 1}$ to its lowest terms.

7. Find the continued product of

$$x^{\frac{1}{2}} + y^{\frac{1}{2}} + z^{\frac{1}{2}},\ -x^{\frac{1}{2}} + y^{\frac{1}{2}} + z^{\frac{1}{2}},\ x^{\frac{1}{2}} - y^{\frac{1}{2}} + z^{\frac{1}{2}},\ x^{\frac{1}{2}} + y^{\frac{1}{2}} - z^{\frac{1}{2}},$$

and divide $\dfrac{4x^4}{9a^2} - \dfrac{x^2}{4} + \dfrac{3}{5}a^2 - \dfrac{9a^4}{25x^2}$ by $\dfrac{2x^2}{3a} + \dfrac{x}{2} - \dfrac{3a^2}{5x}$.

8. Solve these equations :—

$$1.\quad 1 = \frac{4x+3}{2x+1} - \frac{2x-3}{2x-1}.$$

$$2.\quad \left.\begin{array}{r} x^2 + y^2 - xy = 7 \\ 3x - y = 5 \end{array}\right\}.$$

$$3.\quad \sqrt{5x+2} + \sqrt{2x+3} = \sqrt{4x+9} + \sqrt{x+10}.$$

9. Define and find the sum of an arithmetic series.

Sum the series $20 + 18\frac{2}{3} + 17\frac{1}{3} + \ldots$ to 30 terms.

10. If there be inserted two harmonic means x, y between a and b, show that $\dfrac{x+y}{x-y} = 3.\dfrac{a+b}{a-b}$.

11. Prove the rules for determining the characteristic of a logarithm, and for transforming logarithms from one base to another.

Appendix D.

Sessional Examinations.

12. Define the cosine of an angle, and find it in terms of the cotangent. Find the cosines of 30°, 60°, 36°.

13. Prove the formulæ—

$$(1)\ \sin \overline{A-B} = \sin A \cos B - \cos A \sin B.$$
$$(2)\ \tan(30^\circ - A) + \tan(60^\circ + A) = 2\sec(2A - 30^\circ).$$

Solve also the equation $\cot\theta - \cot 3\theta = \operatorname{cosec}\theta - \operatorname{cosec} 3\theta$.

14. Solve a triangle, having given two sides and the included angle. If $B = 2C$ prove that $b^2 = c(a+c)$.

PRIZE PAPER.

1. Two similar and similarly situated polygons have always one centre of similitude.

2. The circles drawn through two of the centres of the four circles which touch the sides of a triangle and through an angle of the triangle pass also through another angle.

3. If tangents be drawn from a point T to a circle whose centre is O, and if through M the middle point of the chord of contact of these tangents any chord PMQ of the circle be drawn, prove that TM : MP :: MQ : MO. Thence show that a circle can be described round TPOQ, and that TP, TQ are equally inclined to TM.

4. Prove that $x^3+y^3+z^3-3xyz=(x+y+z)(x+ay+a^2z)(x+a^2y+az)$ where $a = \dfrac{-1+\sqrt{-3}}{2}$.

5. Show that a quadratic equation can have but two roots.

If α and β be the roots of $x^2+px+q=0$, the equation whose roots are

$$\frac{\alpha^3}{\beta}, \frac{\beta^3}{\alpha} \text{ is } x^2 - x(p^4+2p^2q+2q^2)x + q^2 = 0.$$

6. Sum the series $1^3+2^3+3^3 \,..$ to n terms
$1^3-2^3+3^3+\ldots$ to $2n$ terms
$1\cdot 2x + 2\cdot 3x^2 + 3\cdot 4x^3 + \,..$ to ∞.

7. Find all the positive integral values of x and y which satisfy the equation $7x+19y=730$.

8. Investigate the theorem $\log_e\left(\dfrac{1+x}{1-x}\right) = 2\left(x+\dfrac{x^3}{3}+\text{ etc.}\right)$

Within what limits must x lie?

Prove $\log_e(x+2) - \log_e(x+1) = -(\log_e\overline{x-1} - \log_e\overline{x-2})$

$$+2\left\{\frac{x}{x^2-2} + \frac{1}{3}\left(\frac{x}{x^2-2}\right)^3 + \text{ etc.}\right\},$$

provided x is numerically greater than 2.

9. Expand in partial fractions $\dfrac{x^2}{(x+1)^2(x^2+1)}$.

10. Find the radius of the inscribed circle of a triangle in terms of the angles of the same and the radius of the circumscribing circle.

If O be the centre of the former circle and if AO produced meet BC in D, prove that $OD \cos\dfrac{B-C}{2} = OA \sin\dfrac{A}{2}$.

11. Find the area of the sector of a circle.

If three radii divide the circle into sectors whose angles are A, B, C, prove that $\sin A + \sin B + \sin C = 4 \sin\dfrac{A}{2} \sin\dfrac{B}{2} \sin\dfrac{C}{2}$.

SECOND YEAR.

GREEK.

Morning.

Examiner, JOHN N. JORDAN, *Senior Scholar.*

Translate :—

(A.) DEMOSTHENES—*Philipp.* **Γ.**, 28, 29, 30.

καὶ ταῦθ' ὁρῶντες οἱ Ἕλληνες ἅπαντες καὶ ἀκούοντες οὐ πέμπομεν πρέσβεις περὶ τούτων πρὸς ἀλλήλους καὶ ἀγανακτοῦμεν, οὕτω δὲ κακῶς διακείμεθα καὶ διορωρύγμεθα κατὰ πόλεις ὥστ' ἄχρι τῆς τήμερον ἡμέρας οὐδὲν οὔτε τῶν συμφερόντων οὔτε τῶν δεόντων πρᾶξαι δυνάμεθα, οὐδὲ συστῆναι, οὐδὲ κοινωνίαν βοηθείας καὶ φιλίας οὐδεμίαν ποιήσασθαι, ἀλλὰ μείζω γιγνόμενον τὸν ἄνθρωπον περιορῶμεν, τὸν χρόνον κερδᾶναι τοῦτον ὃν ἄλλος ἀπόλλυται ἕκαστος ἐγνωκώς, ὥς γ' ἐμοὶ δοκεῖ, οὐχ ὅπως σωθήσεται τὰ τῶν Ἑλλήνων σκοπῶν οὐδὲ πράττων, ἐπεὶ ὅτι γε ὥσπερ περίοδος ἢ καταβολὴ πυρετοῦ ἤ τινος ἄλλου κακοῦ καὶ τῷ πάνυ πόρρω δοκοῦντι νῦν ἀφεστάναι προσέρχεται, οὐδεὶς ἀγνοεῖ δήπου. καὶ μὴν κἀκεῖνό γε ἴστε, ὅτι ὅσα μὲν ὑπὸ Λακεδαιμονίων ἢ ὑφ' ἡμῶν ἔπασχον οἱ Ἕλληνες, ἀλλ' οὖν ὑπὸ γνησίων γε ὄντων τῆς Ἑλλάδος ἠδικοῦντο, καὶ τὸν αὐτὸν τρόπον ἄν τις ὑπέλαβε τοῦθ', ὥσπερ ἂν εἰ υἱὸς ἐν οὐσίᾳ πολλῇ γεγονὼς γνήσιος διῴκει τι μὴ καλῶς μηδ' ὀρθῶς, κατ' αὐτὸ μὲν τοῦτο ἄξιον μέμψεως εἶναι καὶ κατηγορίας, ὡς δ' οὐ προσήκων ἢ ὡς οὐ κληρονόμος τούτων ὧν ταῦτα ἐποίει, οὐκ ἐνεῖναι λέγειν.

1. Supply the ellipsis after *ὥσπερ ἂν* ; and explain the syntax of the remainder of the sentence.

2. Determine from internal evidence the date of the *third Philippic*, and relate the circumstances under which it was delivered.

(B.) Translate and explain the following :—

(*a.*) *πόθεν δὴ τούτοις ἡ τροφὴ γενήσεται ; ἐγὼ καὶ τοῦτο φράσω καὶ δείξω, ἐπειδὰν διότι τηλικαύτην ἀποχρῆν οἶμαι τὴν δύναμιν καὶ πολίτας τοὺς στρατευομένους εἶναι κελεύω, διδάξω.*

(*b.*) *μή μοι μυρίους μηδὲ δισμυρίους ξένους, μηδὲ τὰς ἐπιστολιμαίους ταύτας δυνάμεις, ἀλλ' ἣ τῆς πόλεως ἔσται, κἂν ὑμεῖς ἕνα κἂν πλείους κἂν τὸν δεῖνα κἂν ὁντινοῦν χειροτονήσητε στρατηγόν, τούτῳ πείσεται καὶ ἀκολουθήσει.*

(*c.*) *ἀμφότερα οὖν οἶδε, καὶ ἑαυτὸν ὑμῖν ἐπιβουλεύοντα καὶ ὑμᾶς αἰσθανομένους· εὖ φρονεῖν δ' ὑμᾶς ὑπολαμβάνων δικαίως [ἂν] αὐτὸν μισεῖν νομίζει, καὶ παρώξυνται.*

How would the insertion of *ἄν* affect the meaning of the clause?

(*d.*) *ἐγὼ νὴ τοὺς θεοὺς τἀληθῆ μετὰ παῤῥησίας ἐρῶ πρὸς ὑμᾶς καὶ οὐκ ἀποκρύψομαι, οὐχ ἵν' εἰς λοιδορίαν ἐμπεσὼν ἐμαυτῷ μὲν ἐξ ἴσου λόγον παρ' ὑμῖν ποιήσω, τοῖς δ' ἐμοὶ προσκρούσασιν ἐξ ἀρχῆς καινὴν παράσχω πρόφασιν τοῦ πάλιν τι λαβεῖν παρὰ Φιλίππου, οὐδ' ἵνα ὡς ἄλλως ἀδολεσχῶ.*

(*e.*) *οἱ δὲ σύμμαχοι τεθνᾶσι τῷ δέει τοὺς τοιούτους ἀποστόλους.*

(*f.*) *εἰς τοῦτο ἀφῖχθε μωριας ἢ παρανοίας ἢ οὐκ ἔχω τί λέγω (πολλάκις γὰρ ἔμοιγ' ἐπελήλυθε καὶ τοῦτο φοβεῖσθαι, μή τι δαιμόνιον τὰ πράγματα ἐλαύνῃ), ὥστε λοιδορίας φθόνου σκώμματος, ἧς τινὸς ἂν τύχητε ἕνεκ' αἰτίας ἀνθρώπους μισθωτούς, ὧν οὐδ' ἂν ἀρνηθεῖεν ἔνιοι ὡς οὐκ εἰσὶ τοιοῦτοι, λέγειν κελεύετε, καὶ γελᾶτε ἄν τισι λοιδορηθῶσιν.*

Appendix D.

Sessional Examinations.

(*g.*) *τοῦτο δ᾽ ἐστὶν οὐχ ἣν ἄν τις οὑτωσὶ φήσειεν ἀτιμίαν· τί γὰρ τῷ Ζελείτῃ, τῶν Ἀθηναίων κοινῶν εἰ μὴ μεθέξειν ἔμελλεν; ἀλλ᾽ οὐ τοῦτο λέγει, ἀλλ᾽ ἐν τοις φονικοῖς γέγραπται νόμοις, ὑπὲρ ὧν ἂν μὴ διδῷ φόνου δικάσασθαι, ἀλλ᾽ εὐαγὲς ᾖ τὸ αποκτεῖναι "καὶ ἄτιμός" φησι "τεθνάτω." τοῦτο δὴ λέγε καθαρὸν τὸν τούτων τινὰ ἀποκτείναντα εἶναι.*

(C.) Give the meaning of the following words and expressions, as they are used in the *Philippics* :—

(*a.*) *ἀντίδοσις.* (*b.*) *παρακύπτειν ἐπὶ τὸν πόλεμον.* (*c.*) *οἱ παρίοντες.* (*d.*) *χορηγός.* (*e.*) *στηλίτας ποιεῖν.* (*f.*) *λωποδυτεῖν.* (*g.*) *μέτοικος.* (*h.*) *εἰρωνεία.*

Translate :—

(D.) HOMER—*Odyssey*, xxi., 386–413.

ὣς ἄρ᾽ ἐφώνησεν· τῇ δ᾽ ἄπτερος ἔπλετο μῦθος,
κλήϊσσεν δὲ θύρας μεγάρων εὐναιεταόντων.
σιγῇ δ᾽ ἐξ οἴκοιο Φιλοίτιος ἆλτο θύραζε,
κλήϊσσεν δ᾽ ἄρ᾽ ἔπειτα θύρας εὐερκέος αὐλῆς.
κεῖτο δ᾽ ὑπ᾽ αἰθούσῃ ὅπλον νεὸς ἀμφιελίσσης
βύβλινον, ᾧ ῥ᾽ ἐπέδησε θύρας, ἐς δ᾽ ἤϊεν αὐτός·
ἕζετ᾽ ἔπειτ᾽ ἐπὶ δίφρον ἰών, ἔνθεν περ ἀνέστη,
εἰσορόων Ὀδυσῆα· ὁ δ᾽ ἤδη τόξον ἐνώμα,
πάντῃ ἀναστρωφῶν, πειρώμενος ἔνθα καὶ ἔνθα,
μὴ κέρα ἶπες ἔδοιεν, ἀποιχομένοιο ἄνακτος.
ὧδε δέ τις εἴπεσκεν, ἰδὼν ἐς πλησίον ἄλλον·
ἦ τις θηητὴρ καὶ ἐπίκλοπος ἔπλετο τόξων·
ἤ ῥά νύ που τοιαῦτα καὶ αὐτῷ οἴκοθι κεῖται,
ἦ δγ᾽ ἐφορμᾶται ποιησέμεν· ὡς ἐνὶ χερσὶν
νωμᾷ ἔνθα καὶ ἔνθα κακῶν ἔμπαιος ἀλήτης.
ἄλλος δ᾽ αὖτ᾽ εἴπεσκε νέων ὑπερηνορεόντων·
αἲ γὰρ δὴ τοσσοῦτον ὀνήσιος ἀντιάσειεν,
ὡς οὗτός ποτε τοῦτο δυνήσεται ἐντανύσασθαι.
ὣς ἄρ᾽ ἔφαν μνηστῆρες· ἀτὰρ πολύμητις Ὀδυσσεὺς,
αὐτίκ᾽ ἐπεὶ μέγα τόξον ἐβάστασε, καὶ ἴδε πάντῃ,
ὡς ὅτ᾽ ἀνὴρ φόρμιγγος ἐπιστάμενος καὶ ἀοιδῆς
ῥηϊδίως ἐτάνυσσε νέῳ περὶ κόλλοπι χορδήν,
ἅψας ἀμφοτέρωθεν ἐΰστρεφὲς ἔντερον οἰός,
ὣς ἄρ᾽ ἄτερ σπουδῆς τάνυσεν μέγα τόξον Ὀδυσσεύς.
δεξιτερῇ δ᾽ ἄρα χειρὶ λαβὼν πειρήσατο νευρῆς·
ἡ δ᾽ ὑπὸ καλὸν ἄεισε, χελιδόνι εἰκέλη αὐδήν.
μνηστῆρσιν δ᾽ ἄρ᾽ ἄχος γένετο μέγα, πᾶσι δ᾽ ἄρα χρὼς
ἐτράπετο. Ζεὺς δὲ μεγάλ᾽ ἔκτυπε, σήματα φαίνων.

1. Parse *ἔπλετο, ἆλτο, ἔδοιεν, ἔκτυπε.*
2. Point out all the words in the above extract which require the digamma, and give, in each case, your reason for inserting it.
3. When is *hiatus* admissible in the Homeric hexameter? How are many apparent cases of *hiatus* to be explained? Give examples from the extract.

Appendix D.

Sessional Examinations.

4. State a rule of Homeric scansion which determines the quantity of a final diphthong when succeeded by an initial vowel in the following word?

5. Derive and trace the meaning of the following words:—ἀμφιέλισσα, δίφρος, ἐπίκλοπος, ἀμύμων, δαΐς, δαίς, ἀτρεκής, γλαυκῶπις, διατρύγιος, νηλιτής, ἑτεραλκής, δυσηλεγής.

6. Analyse the following grammatical forms, and give their Attic equivalents:—εἰσορόων, ἤϊεν, ἀκαχμένος, ποτιδέγμενος, κεχάροιτο, ἤμβροτον, ἐξαπαφών, ἀγηγέρατο.

Afternoon.

1. Translate:—

HERODOTUS, Book iii., c. 80.

Ὀτάνης μὲν ἐκέλευε ἐς μέσον Πέρσῃσι καταθεῖναι τὰ πρήγματα, λέγων τάδε· "ἐμοὶ δοκέει, ἕνα μὲν ἡμέων μούναρχον μηκέτι γενέσθαι· οὔτε γὰρ ἡδὺ οὔτε ἀγαθόν· εἴδετε μὲν γὰρ τὴν Καμβύσεω ὕβριν ἐπ' ὅσον ἐπεξῆλθε, μετεσχήκατε δὲ καὶ τῆς τοῦ Μάγου ὕβριος. κῶς δ' ἂν εἴη χρῆμα κατηρτημένον μουναρχίη, τῇ ἔξεστι ἀνευθύνῳ ποιέειν τὰ βούλεται; καὶ γὰρ ἂν τὸν ἄριστον ἀνδρῶν πάντων, στάντα ἐς ταύτην τὴν ἀρχὴν, ἐκτὸς τῶν ἐωθότων νοημάτων στήσειε· ἐγγίνεται μὲν γάρ οἱ ὕβρις ὑπὸ τῶν παρεόντων ἀγαθῶν, φθόνος δὲ ἀρχῆθεν ἐμφύεται ἀνθρώπῳ· δύο δ' ἔχων ταῦτα, ἔχει πᾶσαν κακότητα· τὰ μὲν γὰρ ὕβρι κεκορημένος, ἔρδει πολλὰ καὶ ἀτάσθαλα, τὰ δὲ, φθόνῳ. καίτοι ἄνδρα γε τύραννον ἄφθονον ἔδει εἶναι, ἔχοντά γε πάντα τὰ ἀγαθά· τὸ δ' ὑπεναντίον τούτου εἰς τοὺς πολιήτας πέφυκε· φθονέει γὰρ τοῖσι ἀρίστοισι περιεοῦσί τε καὶ ζώουσι, χαίρει δὲ τοῖσι κακίστοισι τῶν ἀστῶν, διαβολὰς δὲ ἄριστος ἐνδέκεσθαι. ἀναρμοστότατον δὲ πάντων· ἤν τε γὰρ αὐτὸν μετρίως θωυμάζῃς, ἄχθεται ὅτι οὐ κάρτα θεραπεύεται· ἤν τε θεραπεύῃ τις κάρτα, ἄχθεται ἅτε θωπί."

2. Translate, explaining anything that requires explanation:—

(*a.*) εἶναι δὲ ταχύτητα οὐδενὶ ἑτέρῳ ὁμοῖον, οὕτω ὥστε, εἰ μὴ προλαμβάνειν τοὺς Ἰνδοὺς τῆς ὁδοῦ ἐν ᾧ τοὺς μύρμηκας συλλέγεσθαι, οὐδένα ἄν σφεων ἀποσώζεσθαι· τοὺς μέν νυν ἔρσενας τῶν καμήλων (εἶναι γὰρ ἥσσονας θεῖν τῶν θηλέων) καὶ παραλύεσθαι, ἐπελκομένους οὐκ ὁμοῦ ἀμφοτέρους.

(*b.*) Καμβύσης δὲ "Κροίσῳ μὲν συνήδεσθαι, ἔφη, περιεόντι· ἐκείνους μέντοι τοὺς περιποιήσαντας οὐ καταπροΐξεσθαι, ἀλλ' ἀποκτενέειν."

(*c.*) κάρτα γὰρ ἐν τοῖσι Πέρσῃσι αἱ ἀγαθοεργίαι ἐς τὸ πρόσω μεγάθεος τιμῶνται.

(*d.*) νῦν δ' ἐπ' ἐμεωυτοῦ βαλόμενος ἔπρηξα.

(*e.*) κῶς οὐκ ἐξέπλωσας τῶν φρενῶν, σεωυτὸν διαφθείρας;

(*f.*) λέγει πρὸς αὐτόν· "καὶ τίς ἐστι Ἑλλήνων εὐεργέτης, ᾧ ἐγὼ προαιδεῦμαι, νεωστὶ μὲν τὴν ἀρχὴν ἔχων";

(*g.*) καὶ κῶς ταῦτα βασιλέϊ Δαρείῳ ἐκχρήσει περιϋβρίσθαι;

(*h.*) ἡ δὲ Πυθίη ἔχρησέ σφι τάδε·

Ἀλλ' ὅταν ἐν Σίφνῳ πρυτανήϊα λευκὰ γένηται,
λεύκοφρύς τ' ἀγορὴ, τότε δὴ δεῖ φράδμονος ἀνδρὸς
φράσσασθαι ξύλινόν τε λόχον κήρυκά τ' ἐρυθρόν.

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3. Give the Attic forms of *θωυμάζω, παρεσκευάδατο, ἀρρωδέω, ἀγίνεον, μεγάθεος, κεκορημένος, ἔωθα*, and the Ionic forms of *ὁποῖος, ἀφῆκε, οὖν, ἀχρεῖος, καθάπερ.*

4. What are the chief peculiarities of the Ionic dialect in the inflexion of verbs in *-έω*, *-άω*, and *-όω*?

Translate into Greek :—

When they were assembled, Xenophon rose up and spoke as follows: "My friends! Aristarchus with his galleys hinders us from sailing to the place we proposed; so that it is not safe for us to embark. He would have us force our way over the holy mountain into the Chersonesus. If we gain that pass and arrive there, he says he will neither sell any more of you, as he did in Byzantium, nor deceive you any longer. He promises also that he will no longer suffer us to want provisions. On the other side Seuthes engages that, if you go to him, you shall find your account in it. Consider therefore, whether you will deliberate upon this matter, while you stay here, or after you are returned to the place, where you may supply yourselves with provisions. My opinion is, that, since we have neither money to purchase what we want, nor are suffered to supply ourselves without it, we return to the villages where the inhabitants, being weaker than we are, do not oppose it; and where, after we are supplied with what is necessary, we may choose that measure which shall appear most to our own advantage. Whoever, therefore, is of this opinion, let him hold up his hand." And they all held up their hands.

LATIN.

Examiner, Professor LEWIS.

Translate :—

VIRGIL—*Georgics*, ii., 238–253.

Salsa autem tellus et quae perhibetur amara,
Frugibus infelix—ea nec mansuescit arando,
Nec Baccho genus aut pomis sua nomina servat—
Tale dabit specimen: Tu spisso vimine qualos
Colaque praelorum fumosis deripe tectis;
Huc ager ille malus dulcesque a fontibus undae
Ad plenum calcentur: aqua eluctabitur omnis
Scilicet, et grandes ibunt per vimina guttae;
At sapor indicium faciet, manifestus et ora
Tristia tentantum sensu torquebit amaror.
Pinguis item quae sit tellus, hoc denique pacto
Discimus: Haud umquam manibus iactata fatiscit,
Sed picis in morem ad digitos lentescit habendo.
Humida maiores herbas alit, ipsaque iusto
Laetior. Ah nimium ne sit mihi fertilis illa,
Neu se praevalidam primis ostendat aristis!

TACITUS—*Agricola*, c. 15.

Namque absentia legati remoto metu, Britanni agitare inter se mala servitutis, conferre iniurias et interpretando accendere. Nihil profici patientia nisi ut graviora tamquam ex facili tolerantibus imperentur. Singulos sibi olim reges fuisse, nunc binos imponi, e quibus legatus in sanguinem, procurator in bona saeviret. Aeque discordiam praeposi-

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torum, aeque concordiam subiectis exitiosam. Alterius manum centuriones, alterius servos vim et contumelias miscere. Nihil iam cupiditati, nihil libidini exceptum. In proelio fortiorem esse qui spoliet: nunc ab ignavis plerumque et imbellibus eripi domos, abstrahi liberos, iniungi dilectus, tamquam mori tantum pro patria nescientibus. Quantulum enim transisse militum, si sese Britanni numerent? sic Germanias excussisse iugum: et flumine, non Oceano defendi. Sibi patriam coniuges parentes, illis avaritiam et luxuriam causas belli esse. Recessuros, ut divus Iulius recessisset, modo virtutem maiorum suorum aemularentur. Neve proelii unius aut alterius eventu pavescerent: plus impetus, maiorem constantiam penes miseros esse.

1. Notice some passages in Hesiod which Virgil has imitated.
2. Write a short essay on the character of Virgil as a poet.
3. O, ubi campi

Spercheosque, et virginibus bacchata Lacaenis
Taygeta! O, qui me gelidis in vallibus Haemi
Sistat, et ingenti ramorum protegat umbra!

Explain the grammatical construction and the geographical allusions.

4. From what sources do we derive our knowledge of Britain under the Romans?
5. Narrate the life of Agricola.
6. Name the chief Latin authors of the Silver Age.

Translate into Latin:—

The longest letters are always the most agreeable.
To each virtue its own peculiar praise is due.
Does it then become an orator almost to die with laughing every third word?
They cry out that each man must abide by his own judgment.
Would you dare to refuse to abide by the judgment of the great Plato?
I must explain what was the opinion of that god of mine, Plato.

Translate into Latin elegiacs:—

It was night, and sleep closed my eyes,
A vision of this kind frightened me.
There stood beneath a hill a grove of ilex,
And many birds were concealed therein.
A very green plot of meadow-ground was beneath,
Moist with a softly sounding brook.
I was avoiding the heat,
But there was heat even under the boughs.

Translate into Latin elegiacs:—*

Of all the cities in Romanian lands,
The chief, and most renowned, Ravenna stands;
Adorned in ancient times with arms and arts,
And rich inhabitants, with generous hearts.
But Theodore the brave, above the rest,
With gifts of fortune and of nature blessed,
The foremost place for wealth and honour held,
And all in feats of chivalry excelled.

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* The remainder of this paper was also used by the Third Year's Latin Class.

Translate into Latin prose :—

The first thing every one looks after, is to provide himself with necessaries. This point will engross our thoughts until it be satisfied. If this is taken care of to our hands, we look out for pleasures and amusements; and among a great number of idle people, there will be many whose pleasures will lie in reading and contemplation. These are the two great sources of knowledge, and as men grow wise they naturally love to communicate their discoveries; and others seeing the happiness of such a learned life, and improving by their conversation, emulate, imitate, and surpass one another, until a nation is filled with races of wise and understanding persons.

LOGIC.

Examiner, Professor READ.

1. Define collective, æquivocal, and attributive nouns.

2. Explain the processes of abstraction and generalisation.

3. In what sense is it true that the species includes the genus.

4. Of what does a logical definition consist? Give the rules for good definition?

5. What is meant by "necessary," "impossible," and "contingent matter"?

6. Which is the most perfect form of opposition and why?

7. Upon what logical principles does the validity of conversion by negation depend?

8. Construct and reduce syllogisms in Disamis and Dokamo.

9. Special rules for third figure with proofs.

10. Is it true that a syllogism in Barbara can be made up of three hypothetical propositions?

11. How does a dilemma differ from a disjunctive syllogism?

12. What reasons can be given for the rejection of the classes of propositions denoted by η and ω?

13. What different explanations have been given of the form of the inductive syllogism? Which do you prefer and why?

14. Define "cause" and justify your definition. What place does the notion hold in inductive logic?

15. By which of the experimental methods can the highest amount of certainty be attained and why?

16. Explain the deductive method. Why are we compelled to resort to it?

17. How do derivative and empirical laws differ from each other?

18. Define fallacies of observation and of generalisation. How far are they related to, and how do they differ from each other.

MATHEMATICS.

Examiner, Professor NIVEN.

N.B.—The following Paper was common to second year's students of Arts and Engineering.

1. Explain Newton's method of finding the volume of a solid and apply it to find the volume of a right cone.

2. Given the three sides of a spherical triangle, find the angles by formulæ adapted to logarithmic computation.

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3. Find an expression for the area of a spherical triangle.

If E be the complement of the spherical excess of a right angled spherical triangle,

$$\tan\frac{E}{2}=\frac{\cos\dfrac{a+b}{2}}{\cos\dfrac{a-b}{2}}$$

4. Apply Demoivre's theorem to expand $\sin n\theta$ in terms of $\sin\theta$ and $\cos\theta$. Deduce $\sin 5\theta$ in terms of $\sin\theta$.

5. Given the co-ordinates of P,Q, find the inclination of PQ to the axis of x, using (1) rectangular, (2) oblique, co-ordinates.

Find the equations of the lines passing through $(0,-3)$ (rectangular co-ordinates) and inclined at angles $\tan^{-1}\frac{4}{3}$ to the two axes.

6. Find the equation of a line in the form $\frac{x}{a}+\frac{y}{b}=1$.

If A be a fixed point on the bisector of the angle xoy, and XY be *any* line through A cutting the axes in X, Y, show that $\frac{1}{oX}+\frac{1}{oY}=\frac{2\cos\frac{\alpha}{2}}{oA}$ where $\angle xoy=\alpha$.

7. If the normal at P to an ellipse whose foci are S,H meet SH in G, prove that SG : HG : : SP : HP.

8. Find the equation of the chord of contact of tangents drawn from any point T to a parabola.

If the middle point of the chord of contact lie on a straight line, find the locus of T.

9. Prove the formulæ for differentiating $\frac{u}{v}, f\{\phi(x)\}$.

Differentiate $\sec^{-1}\frac{x}{a}$, $e^{\cos x}$, $\tan^{-1}\frac{bx}{\sqrt{a^2+b^2+a^2x^2}}$

10. Investigate the conditions for a maximum or minimum value of $\phi(x)$.

If lines be drawn through a point between two given straight lines, find that one which cuts off the least area.

11. If x and y be functions of t, find $\frac{dy}{dx}, \frac{d^2y}{dx^2}$.

Given $x=\frac{a}{2}(2\cos\theta-\cos 2\theta-1), y=\frac{a}{2}(2\sin\theta-\sin 2\theta)$, prove that

$$\frac{d^2y}{dx^2}=\frac{3}{2}\left(1+\left(\frac{dy}{dx}\right)^2\right)^{\frac{3}{2}}\left(4a^2.\overline{x^2+y^2}\right)^{-\frac{1}{4}}.$$

12. Define and find an expression for the subnormal of a curve.

13. Prove the formulæ for integration by parts.

Integrate $\frac{2x-1}{x^2-4x+3}$, $\frac{x}{\sqrt{1-x-x^2}}$, $x^3\sin^{-1}x$.

Find the area of the curve whose equation is $r^2\{\sec^2\theta+\operatorname{cosec}^2\theta\}=a^2$.

NATURAL PHILOSOPHY.

(*Honor Class.*)

Examiner, Professor ENGLAND.

1. What is meant by the dew point, how can it be practically determined?

2. How much ice at 0 C. must be added to 2 ozs. of alcohol at 10 C. to reduce its temperature to 2 C., the specific heat of alcohol being ·67, and the latent heat of water 79 C.

3. How are paramagnetic and diamagnetic bodies distinguished?

4. How does the intensity of a current depend on the length, section, and nature of the conductor through which it is passing; what do you mean by the terms *equivalent length and equivalent section* of a conductor?

5. By what arrangement can a current be made to rotate round a magnet, and describe the direction of the force which produces this motion?

6. What is the use of the Collimating lens in the ordinary spectroscope?

7. Give some instance of the interference of light.

8. How can the existence of the obscure rays of the solar spectrum be observed?

9. To what does Helmholtz ascribe the difference of quality of two musical notes of the same pitch?

10. How is the cubical expansion of glass determined?

N.B.—The following Paper was common to second year's students in Arts and Engineering.

1. An inclined plane rises 5 in 18; what force parallel to the plane will support a weight of 360 lbs.?

2. A uniform bar, 6 feet in length, is used as a lever of the first kind; when the fulcrum is 8 inches from one end, a weight of 84 lbs. at one end is balanced by a power of 10 lbs. at the other, find the weight of the bar.

3. If two forces, act in the same plane, prove that the moment of their resultant with regard to any point in that plane is equal to the sum of the moments of the forces.

4. State Newton's second law of motion, and some experimental proofs in confirmation of it.

5. A body is projected vertically upwards, prove that when it passes through any point in its descending path it has the same velocity as it had in passing through the same point in ascending.

6. Find the line of quickest descent from a point to a circle in the same vertical plane.

7. Find the pressure on a rectangular plane 18 inches by 6, when immersed in water, so that its centre of gravity is at a depth of 24 inches.

8. If a cubic inch of mercury weigh 7 ozs., and a cubic inch of air ·31 grains, find the height of a homogeneous atmosphere if the barometer stands at 30 inches.

9. Investigate the rule for determining the magnifying power of a telescope.

10. If the focal length of a convex mirror be 20 inches, where must an object be placed in order that the image should be one-third of its lineal dimensions?

11. How can the latitude of a place be determined from observing the sun's greatest altitude?

12. What must be the relative position of the earth, sun, and an inferior planet when the planet appears stationary?

Prize Questions.

1. Two forces, 5 lbs., 3 lbs., acting respectively parallel to the base and length of an inclined plane, will each singly sustain upon it a weight W, find the magnitude of W.

2. A cylinder, the radius of whose base is r and height h, is placed with its base resting on an inclined plane, what will be the plane's inclination when the cylinder first falls over, the friction being sufficient to prevent any sliding motion?

3. A body is dropped from a height of 400 feet, after it has fallen through 50 feet, another is projected from the same point, determine the velocity of projection that they should reach the ground at the same instant.

4. A body falls down an inclined plane, and at the instant it begins to fall, another is projected upward from the bottom with a velocity acquired in falling down a similar plane of twice the length; where will they meet?

5. Given the sun's declination and the latitude of the place; show how to calculate the time of sunrise and the duration of twilight.

THIRD YEAR.

GREEK.

Examiner, JOHN N. JORDAN, A.B., *Senior Scholar.*

Morning.

Translate:—

(A.) THUCYDIDES, Book iii., c. 40.

"οὔκουν δεῖ προθεῖναι ἐλπίδα οὔτε λόγῳ πιστὴν οὔτε χρήμασιν ὠνητὴν, ὡς ξυγγνώμην ἁμαρτεῖν ἀνθρωπίνως λήψονται. ἄκοντες μὲν γὰρ οὐκ ἔβλαψαν, εἰδότες δὲ ἐπεβούλευσαν· σύγγνωμον δ' ἐστὶ τὸ ἀκούσιον. ἐγὼ μὲν οὖν καὶ τότε πρῶτον καὶ νῦν διαμάχομαι μὴ μεταγνῶναι ὑμᾶς τὰ προδεδογμένα, μηδὲ τρισὶ τοῖς ἀξυμφορωτάτοις τῇ ἀρχῇ, οἴκτῳ καὶ ἡδονῇ λόγων καὶ ἐπιεικείᾳ, ἁμαρτάνειν. ἔλεός τε γὰρ πρὸς τοὺς ὁμοίους δίκαιος ἀντιδίδοσθαι, καὶ μὴ πρὸς τοὺς οὔτ' ἀντοικτιοῦντας ἐξ ἀνάγκης τε καθεστῶτας ἀεὶ πολεμίους· οἵ τε τέρποντες λόγῳ ῥήτορες ἕξουσι καὶ ἐν ἄλλοις ἐλάσσοσιν ἀγῶνα, καὶ μὴ ἐν ᾧ ἡ μὲν πόλις βραχέα ἡσθεῖσα μεγάλα ζημιώσεται, αὐτοὶ δὲ ἐκ τοῦ εὖ εἰπεῖν τὸ παθεῖν εὖ ἀντιλήψονται· καὶ ἡ ἐπιείκεια πρὸς τοὺς μέλλοντας ἐπιτηδείους καὶ τὸ λοιπὸν ἔσεσθαι μᾶλλον δίδοται ἢ πρὸς τοὺς ὁμοίους τε καὶ οὐδὲν ἧσσον πολεμίους ὑπολειπομένους."

1. Give the substance of the speeches of Cleon and Diodotus in the second debate on the affair of the Mitylenæans.

2. Give a brief sketch of Cleon's political life.

(B.) Translate with explanatory notes:—

(*a.*) *ὁ γὰρ παραβαίνειν τι βουλόμενος τῷ μὴ προέχων ἂν ἐπελθεῖν ἀποτρέπεται. αὐτόνομοί τε ἐλείφθημεν οὐ δι' ἄλλο τι ἢ ὅσον αὐτοῖς ἐς τὴν ἀρχὴν εὐπρεπείᾳ τε λόγου καὶ γνώμης μᾶλλον ἐφόδῳ ἢ ἰσχύος τὰ πράγματα ἐφαίνετο καταληπτά. ἅμα μὲν γὰρ μαρτυρίῳ ἐχρῶντο μὴ ἂν τούς γε ἰσοψήφους ἄκοντας, εἰ μή τι ἠδίκουν οἷς ἐπῄεσαν, ξυστρατεύειν.*

(*b.*) *εἰ γὰρ δυνατοὶ ἦμεν ἐκ τοῦ ἴσου καὶ ἀντεπιβουλεῦσαι καὶ ἀντιμελλῆσαι τί ἔδει ἡμᾶς ἐκ τοῦ ὁμοίου ἐπ' ἐκείνοις εἶναι;*

(*c.*) μάλισται δὲ οἱ μὴ ξὺν προφάσει τινὰ κακῶς ποιοῦντες ἐπεξέρχονται καὶ διόλλυνται, τὸν κίνδυνον ὑφορώμενοι τοῦ ὑπολειπομένου ἐχθροῦ.

(*d.*) καὶ προσξυνεβάλετο οὐκ ἐλάχιστον τῆς ὁρμῆς αἱ Πελοποννησίων νῆες ἐς Ἰωνίαν ἐκείνοις βοηθοὶ τολμήσασαι παρακινδυνεῦσαι.

(*e.*) εἰ γὰρ ὅ τε πείσας καὶ ὁ ἐπισπόμενος ὁμοίως ἐβλάπτοντο, σωφρονέστερον ἂν ἐκρίνετε· νῦν δὲ πρὸς ὀργὴν ἥν τινα τύχητε ἔστιν ὅτε σφαλέντες τὴν τοῦ πείσαντος μίαν γνώμην ζημιοῦτε, καὶ οὐ τὰς ὑμετέρας αὐτῶν, εἰ πολλαὶ οὖσαι ξυνεξήμαρτον.

(C.) Expand the historical allusions in the following :—

(*a.*) μετὰ τὸν σεισμὸν τῶν ἐς Ἰθώμην Εἱλώτων ἀποστάντων.

(*b.*) ἐναυμαχήσαμεν ἐπ' Ἀρτεμισίῳ, μάχῃ τε τῃ ἐν τῇ ἡμετέρᾳ γῇ γενομένῃ παρεγενόμεθα ὑμῖν τε καὶ Παυσανίᾳ.

(*c.*) ἱππεῖς καὶ πεντακοσιομέδιμνοι καὶ οἱ μέτοικοι.

Translate :—

(D.) ARISTOPHANES—*Aves*, vv. 685–703.

ΧΟ. ἄγε δὴ φύσιν ἄνδρες ἀμαυρόβιοι, φύλλων γενεᾷ προσόμοιοι,
ὀλιγοδρανέες, πλάσματα πηλοῦ, σκιοειδέα φῦλ' ἀμενηνά,
ἀπτῆνες ἐφημέριοι, ταλαοὶ βροτοί, ἀνέρες εἰκελόνειροι,
πρόσχετε τὸν νοῦν τοῖς ἀθανάτοις ἡμῖν, τοῖς αἰὲν ἐοῦσιν,
τοῖς αἰθερίοις τοῖσιν ἀγήρῳς τοῖς ἄφθιτα μηδομένοισιν,
ἵν' ἀκούσαντες πάντα παρ' ἡμῶν ὀρθῶς περὶ τῶν μετεώρων
φύσιν οἰωνῶν γένεσίν τε θεῶν ποταμῶν τ' ἐρέβους τε χάους τε
εἰδότες ὀρθῶς παρ' ἐμοῦ Προδίκῳ κλάειν εἴπητε τὸ λοιπόν.
χάος ἦν καὶ νὺξ ἔρεβός τε μέλαν πρῶτον καὶ τάρταρος εὐρύς·
γῆ δ' οὐδ' ἀὴρ οὐδ' οὐρανὸς ἦν, ἐρέβους δ' ἐν ἀπείροσι κόλποις
τίκτει πρώτιστον ὑπηνέμιον νὺξ ἡ μελανόπτερος ᾠόν,
ἐξ οὗ περιτελλομέναις ὥραις ἔβλαστεν ἔρως ὁ ποθεινός,
στίλβων νῶτον πτερύγοιν χρυσαῖν, εἰκὼς ἀνεμώκεσι δίναις.
οὗτος χάει ἠερόεντι μιγεὶς νυχίῳ κατὰ τάρταρον εὐρὺν
ἐνεόττευσεν γένος ἡμέτερον, καὶ πρῶτον ἀνήγαγεν ἐς φῶς.
πρότερον δ' οὐκ ἦν γένος ἀθανάτων, πρὶν ἔρως ξυνέμιξεν ἅπαντα·
ξυμμιγνυμένων δ' ἑτέρων ἑτέροις γένετ' οὐρανὸς ὠκεανός τε
καὶ γῆ πάντων τε θεῶν μακάρων γένος ἄφθιτον. ὧδε μέν ἐσμεν
πολὺ πρεσβύτατοι πάντων μακάρων ἡμεῖς.

1. Derive ἀμαυρόβιοι, ὀλιγοδρανέες, πλάσματα, ἀμενηνὰ, μετεώρων, οἰωνῶν, ἐρέβους, ἀπείροσι, ἀνεμώκεσι, τάρταρον.

2. Explain the term *Parabasis*. Of what different parts did the complete *Parabasis* consist?

3. Notice some striking imitations of other poets in the above extract.

4. Translate, and comment on the historical and political allusions in the following words or expressions :—

(*a.*) ἐναποτῖσαι χρήματα. (*b.*) ἀπηλιαστής. (*c.*) ὄμνυμι ἐπὶ τούτοις, πᾶσι νικᾶν τοῖς κριταῖς καὶ τοῖς θεαταῖς πᾶσιν. (*d.*) μελλονικιᾶν. (*e.*) πρόξενος. (*f.*) ἀνακύψεται κλητῆρ' ἄγουσ' ἕωθεν ἡ Σαλαμινία. (*g.*) τοὺς δ' αὖ θεοὺς ἀπολεῖτε λιμῷ Μηλίῳ.

Appendix D.

Sessional Examinations.

Afternoon.

(A.) Translate and comment on each of the following extracts from the *Protagoras* :—

(*a.*) *εἰ μὲν οὖν καὶ Πρωταγόρας ὁμολογεῖ φαυλότερος εἶναι Σωκράτους διαλεχθῆναι, ἐξαρκεῖ Σωκράτει· εἰ δὲ ἀντιποιεῖται, διαλεγέσθω ἐρωτῶν τε καὶ ἀποκρινόμενος, μὴ ἐφ' ἑκάστῃ ἐρωτήσει μακρὸν λόγον ἀποτείνων, ἐκκρούων τοὺς λόγους καὶ οὐκ ἐθέλων διδόναι λόγον, ἀλλ' ἀπομηκύνων, ἕως ἂν ἐπιλάθωνται περὶ ὅτου τὸ ἐρώτημα ἦν οἱ πολλοὶ τῶν ἀκουόντων· ἐπεὶ Σωκράτη γε ἐγὼ ἐγγυῶμαι μὴ ἐπιλήσεσθαι, οὐχ ὅτι παίζει καί φησιν ἐπιλήσμων εἶναι.*

(1.) Explain the metaphor in *ἐκκρούων*.

(2.) Illustrate from the second clause of this passage the difference in meaning between *μὴ* and *οὐ* with the participle.

(*b.*) *νῦν δ' ἐστὶν ὥσπερ ἂν εἰ δέοιό μου Κρίσωνι τῷ Ἱμεραίῳ δρομεῖ ἀκμάζοντι ἕπεσθαι, ἢ τῶν δολιχοδρόμων τῳ ἢ τῶν ἡμεροδρόμων διαθεῖν τε καὶ ἕπεσθαι. εἴποιμι ἄν σοι, ὅτι πολὺ σοῦ μᾶλλον ἐγὼ ἐμαυτοῦ δέομαι θέουσι τούτοις ἀκολουθεῖν, ἀλλ' οὐ γὰρ δύναμαι, ἀλλ' εἴ τι δέει θεάσασθαι ἐν τῷ αὐτῷ ἐμέ τε καὶ Κρίσωνα θέοντας, τούτου δέου συγκαθεῖναι.*

1. *ὥσπερ ἂν*. With what verb does *ἂν* go?

(*c.*) *ἐγὼ δε τούτοις ἅπασι κατὰ τοῦτο εἶναι οὐ ξυμφέρομαι. ἡγοῦμαι γὰρ αὐτοὺς οὔ τι διαπράξασθαι ὃ ἐβουλήθησαν· οὐ γὰρ λαθεῖν τῶν ἀνθρώπων τοὺς δυναμένους ἐν ταῖς πόλεσι πράττειν, ὧνπερ ἕνεκα ταῦτ' ἐστὶ τὰ προσχήματα, ἐπεὶ οἵ γε πολλοί, ὡς ἔπος εἰπεῖν, οὐδὲν αἰσθάνονται, ἀλλ' ἅττ' ἂν οὗτοι διαγγέλωσι, ταῦτα ὑμνοῦσι. τὸ οὖν ἀποδιδράσκοντα μὴ δύνασθαι ἀποδρᾶναι, ἀλλὰ καταφανῆ εἶναι, πολλὴ μωρία καὶ τοῦ ἐπιχειρήματος, καὶ πολὺ δυσμενεστέρους παρέχεσθαι ἀνάγκη τοὺς ἀνθρώπους.*

1. Analyse the construction of the *first* and *last* clauses of the above extract.

(*d.*) *ἐπειδὴ δε σοῦ ἀκούω ταῦτα λέγοντος, κάμπτομαι καὶ οἶμαί τί σε λέγειν διὰ τὸ ἡγεῖσθαί σε πολλῶν μὲν ἔμπειρον γεγονέναι, πολλὰ δὲ μεμαθηκέναι.*

(*e.*) *εἶθ' ὥσπερ ἂν εἰ ζητοῖς, τίς διδάσκαλος τοῦ ἑλληνίζειν, οὐδ' ἂν εἷς φανείη, οὐδέ γ' ἄν, οἶμαι, εἰ ζητοῖς, τίς ἂν ἡμῖν διδάξειε τοὺς τῶν χειροτεχνῶν υἱεῖς αὐτὴν ταύτην τὴν τέχνην, ἣν δὴ παρὰ τοῦ πατρὸς μεμαθήκασι, καθ' ὅσον οἷός τ' ἦν ὁ πατὴρ καὶ οἱ τοῦ πατρὸς φίλοι ὄντες ὁμότεχνοι, τούτους ἔτι τίς ἂν διδάξειεν, οὐ ῥᾴδιον οἶμαι εἶναι, ὦ Σώκρατες, τούτων διδάσκαλον φανῆναι, τῶν δὲ ἀπείρων παντάπασι ῥᾴδιον, οὕτω δὲ ἀρετῆς καὶ τῶν ἄλλων πάντων. ἀλλὰ κἂν εἰ ὀλίγον ἔστι τις ὅστις διαφέρει ἡμῶν προβιβάσαι εἰς ἀρετήν, ἀγαπητόν.*

1. What is the principal clause in the first sentence? Explain the syntax of the dependent clauses, noticing some repetitions and omissions.

2. Assign their respective verbs to *ὥσπερ ἂν—οὐδέ γ' ἄν—ἀλλὰ κἂν.*

3. State the meaning of each of the following words and phrases :—*ἰδιώτης—οἱ τοξόται—νέμονται ὥσπερ ἄφετοι—διδάσκειν δρᾶμα—ῥαβδοῦχος.*

4. Distinguish between *ἅττα* and *ἄττα* ; *ἀτεχνῶς* and *ἀτέχνως* ; *οὔκουν* and *οὐκοῦν*.

(B.) Translate into Greek :—

Further, it behoves every one who is under punishment either to become better and so receive profit, or to become an example to others, that they while they see him suffering whatever he may suffer, may through fear become better. Now, those who are benefited, while suffering punishment at the hands of God and men, are such as may commit curable offences; but still, it is through sorrows and pangs that the benefit accrues to them, both here and in the realm of Hades; since it is not possible for them otherwise to get rid of injustice; but as for such as act unjustly in the extreme, and through such unjust acts become incurable, of these are the examples made, and these no longer in any way themselves receive profit as being incurable; but others receive profit, to wit, those who see these, on account of their offences, undergoing the severest punishments through all time, being suspended, in the realm of Hades, as spectacles and warnings to such of the unrighteous as successively arrive.

LATIN.

Examiner, Professor LEWIS.

Translate:—

CICERO—*Second Philippic*, c. xiv.

Sed unam rem vereor ne non probes. Si enim fuissem, non solum regem, sed regnum etiam de re publica sustulissem: et, si meus stilus ille fuisset, ut dicitur, mihi crede, non solum unum actum, sed totam fabulam confecissem. Quamquam si interfici Cæsarem voluisse crimen est, vide, quaeso, Antoni, quid tibi futurum sit, quem et Narbone hoc consilium cum C. Trebonio cepisse notissimum est, et ob eius consilii societatem, quum interficeretur Cæsar, tum te a Trebonio vidimus sevocari. Ego autem—vide quam tecum agam non inimice!—quod bene cogitasti aliquando, laudo: quod non indicasti, gratias ago: quod non fecisti, ignosco. Virum res illa quaerebat. Quod si te in iudicium quis adducat usurpetque illud Cassianum, cui bono fuerit, vide, quaeso, ne haereas. Quamquam illud quidem fuit, ut tu dicebas, omnibus bono, qui servire nolebant, tibi tamen praecipue, qui non modo non servis, sed etiam regnas: qui maximo te aere alieno ad aedem Opis liberavisti: qui per easdem tabulas innumerabilem pecuniam dissipavisti, ad quem e domo Cæsaris tam multa delata sunt: cuius domi quaestuosissima est falsorum commentariorum et chirographorum officina, agrorum, oppidorum, immunitatum, vectigalium flagitiosissimae nundinae.

LUCRETIUS, Book III., vv. 118–142.

Nunc animam quoque ut in membris cognoscere possis
Esse, neque harmonia corpus sentire solere,
Principio fit uti detracto corpore multo
Saepe tamen nobis in membris vita moretur:
Atque eadem rursum, cum corpora pauca caloris
Diffugere forasque per os est editus aër,
Deserit extemplo venas atque ossa relinquit;
Noscere ut hinc possis non aequas omnia partis
Corpora habere neque ex aequo fulcire salutem,
Sed magis haec, venti quae sunt calidique vaporis
Semina, curare in membris ut vita moretur.
Est igitur calor ac ventus vitalis in ipso
Corpore, qui nobis moribundos deserit artus.
Quapropter quoniam est animi natura reperta
Atque animae quasi pars hominis, redde harmoniai
Nomen, ad organicos alto delatum Heliconi;

Appendix D

Sessional Examinations.

Sive aliunde ipsi porro traxere et in illam
Transtulerunt, proprio quae tum res nomine egebat.
Quidquid *id* est, habeant: tu cetera percipe dicta.
 Nunc animum atque animam dico coniuncta teneri
Inter se atque unam naturam conficere ex se,
Sed caput esse quasi et dominari in corpore toto
Consilium, quod nos animum mentemque vocamus.
Idque situm media regione in pectoris haeret.

1. Quote the lines in which Juvenal mentions this oration.

2. Narrate the life of Antony the Triumvir.

3. Etenim si auctores ad liberandam patriam desiderarentur illis auctoribus, Brutos ego impellerem, quorum uterque L. Bruti imaginem quotidie videret, alter etiam Ahalae?

What are the various readings in this passage? Explain the historical allusions.

4. Name the works of Cicero which were composed about the same time as the second *Philippic*.

5. When did Lucretius flourish? In what terms does Cicero characterize his poetry?

6. Notice the imitations of Sappho by Latin authors.

7. Give an account of the Epicurean system of philosophy, especially with reference to the nature of the soul.

8. Compare the versification of Lucretius with that of the Augustan age.

9. Mention the chief peculiarities of Etruscan art.

N.B.—The Latin Composition in Prose and Verse was common to students of the second and third years. *See* pp. 74, 75, for the passages to be translated.

ENGLISH LITERATURE.

Examiner, Professor ARMSTRONG.

1. Give an account of Surrey and Wyatt.

2. Discuss the value of the metrical tests as a means of determining the chronological order of Shakspere's plays.

3. Write a note upon the supernatural element in *Macbeth*, and describe what appears to you to have been the attitude of Shakspere's mind towards the current notions of a spiritual world.

4. Endeavour to separate from the text of *Macbeth* any passages and scenes which may appear to you to exhibit peculiarities of style not recognizable as Shakspere's, and discuss the importance of certain disputed scenes and passages in relation to the plot and characterization of the play.

5. Analyze the *Prothalamion* of Spenser.

6. Compare the *Lycidas* of Milton with Shelley's *Adonais*.

7. Comment upon the lyrical style of Dryden.

8. Name the Restoration dramatists, and give the titles of their principal plays.

9. Sketch briefly the life of Pope, giving the substance of or quoting *verbatim* any of Dr. Johnson's criticisms of his writings which you may remember.

10. Quote or instance passages in the *Rape of the Lock* which may be said to represent fairly Pope's satirical powers.

11. Quote or give the substance of Lord Macaulay's description of

Dr. Johnson, commencing—"Johnson came among them [the London men of letters] the solitary specimen of a past age."

Enumerate Johnson's principal works.

12. Give a brief account of some of the most distinguished members of the Literary Club, associated in fame with Dr. Johnson.

13. Trace the growth and development of the Naturalistic movement in English poetry.

14. Explain the relations of Shelley and Byron respectively to the Lake School.

15. Make an analysis of Wordsworth's *Ode on the Intimations of Immortality*, showing the manner in which the dominant idea is worked out, and explain the relations of this poem to Wordsworth's character; life, and philosophy.

⁂ *Candidates not competing for a Prize selected* ten *of these questions as a maximum.*

MODERN HISTORY.

Examiner, Professor ARMSTRONG.

1. State the limits of the Empire of Charlemagne; name the various races over which he ruled, and with which he contested, and the districts they severally inhabited.

2. About what period after the fall of the Western Empire do the intellectual energies of Europe begin to exhibit symptoms of revival, and in what forms do they find their earliest expression?

3. Why is it necessary to a full comprehension of the history of the world to study the development of the art and literature of nations in successive ages?

4. Give a brief account of the origin and early formation of the Romance languages.

5. Trace the course of Arab invasion and conquest, subsequent to the death of Mohammed; and explain the various apparent influences, direct and indirect, of the Arabs upon the mind and political condition of Europe.

6. What are the five leading privileges instanced by Hallam as showing the degree in which the peers and barons of France, during the prevalence of the feudal principles, were independent of the Crown?

7. Distinguish the elements of Feudalism which appear to have been of temporary, from those which appear to have been of permanent advantage to European society.

8. What are the three great events in Italian history mentioned by Hallam as marking the period between Conrad of Franconia and Frederic Barbarossa?

9. Under what political circumstances was the Lombard League established?—Name the principal cities of the Confederacy, and give a brief account of their operations.

10. What events characterize the period of Italian history between the death of Frederic II. (1250), and the invasion of Charles VIII. (1494)?

11. Give some account of the government of Venice during the middle ages.

What were the principal foreign acquisitions of Venice during this period?

12. Name the principal leaders in Italian literature and art prior to the opening of the fifteenth century.

13. Trace the progress of Representative Government in England to the close of the fourteenth century.

14. From your knowledge of the literary history of Provence, draw a picture of the social life of Languedoc during the thirteenth century.

15. Name any modern political and social movements which seem to be a direct consequence of established systems of the middle ages.

*** *Candidates who do not seek a Prize will only be expected to select* ten *of the above questions as a maximum.*

METAPHYSICS.

Examiner, Professor READ.

1. What is Bacon's place in the History of Philosophy?

2. Explain the method of Descartes, and compare it with that of Bacon.

3. In what sense did Berkeley deny the reality of our sense perceptions, and how far had previous writers prepared the way for such a theory?

4. Criticise Locke's account of the origin of our Idea of Time.

5. Are his objections to the theory of Innate Ideas tenable?

6. Examine the arguments by which Hume attempts to show that our notion of Cause and Effect is neither *à priori* or the result of reasoning.

7. What is meant by synthetical *à priori* judgments? How does Kant establish their existence?

8. What province does Kant assign to the Practical Reason?

9. What was the real import of Reid's appeal to common sense? Did he consistently adopt it himself?

10. What account does Sir W. Hamilton give of the Elaborative and Regulative Faculties?

11. What is the true method of ascertaining what are the primary facts of consciousness? How far was it followed by Reid and Sir W. Hamilton?

12. Is Mill's account of our belief in an external world inconsistent with the belief in the existence of other minds than our own?

EXPERIMENTAL PHYSICS. (HONOR CLASS.)

Examiner, Professor ENGLAND.

1. According to Regnault's determination the co-efficient of expansion of air between 0 C. and 100 C. when the volume remains constant but pressure changed is ·3665, but when the pressure is constant and volume alters, it is ·367. What is the cause of the discrepancy?

2. Some bodies have their melting points raised, others lowered by increased pressure. Give the general law.

3. Explain how the co-efficient of expansion of a liquid may be determined by weighing in it, at different temperatures, a solid whose co-efficient of expansion is known.

4. Explain the phenomenon of Resonance, and determine the length of a tube which will produce the maximum effect in reinforcing the sound of a tuning fork which makes 256 vibrations per second.

5. Describe Fresnel's rhomb and its use.
6. Describe and explain the formation of Newton's rings.
7. Explain the principle and use of Wheatstone's Bridge.
8. What is meant by Electric Potential. How can the unit of Potential be referred to the natural units of mass, length, and time?
9. How is the magnetic dip accurately observed?
10. Describe Sir W. Thompson's reflecting galvanometer.

MATHEMATICAL PHYSICS.

Examiner, Professor ENGLAND.

1. If R be the magnitude and x and $\bar{y}$ the co-ordinates of the point of application of the resultant of a system of parallel forces P, P′ P″ &c., prove that

$$R\bar{x} = Px + P'x' + P''x'' \text{ \&c.},$$
$$\text{and } R\bar{y} = Py + P'y' + P''y'' \text{ \&c.}$$

2. A weight W is suspended from one extremity of a string which passes through a ring C fastened to its other extremity; the string passing over two fixed pulleys A and B in the same horizontal line. Find the position of equilibrium.

3. Two weights P and Q support each other on two places inclined to the horizon at angles α and β respectively by means of a string passing over the common vertex of the planes. Find the ratio of P to Q, and the tension of the string.

4. One corner of a triangle, equal to the n^{th} part of its area, is cut off by a line parallel to the base, find the centre of gravity of the remaining area.

5. If a be the base of an inclined plane, determine its height if the time of falling down be a minimum.

6. Prove that the path of a projectile in vacuo is a parabola, and determine the co-ordinates of the focus.

7. A pendulum which vibrates seconds at the sea level is carried to height of four miles; what alteration takes place in its time of vibration?

8. A cone floats in water with three-fourths of its axis immersed, what is its specific gravity?

9. Given the sun's declination, and the latitude of the place, determine the time when the sun attains a given altitude.

10. Given the right ascension and declination of a celestial object, determine its latitude and longitude.

PRIZE QUESTIONS.

1. A solid is composed of a hemisphere, and a paraboloid of equal bases, placed base to base, find the ratio between their dimensions in order that the whole may rest with any point of the spherical surface on a horizontal plane.

2. Find the centre of gravity of the loop of the curve $r^2 = a^2 \cos 2\theta$.

3. A solid is formed by the revolution of the sector of a circle about one of the radii, compute its attraction on a particle at the centre.

4. A particle attracted towards a point by a force equal to $\frac{r}{m^2} + \frac{h^2}{r^3}$ is projected from an apse at the distance $m^{\frac{1}{2}}h^{\frac{1}{2}}$; find the polar equation to its path.

Appendix D.

Sessional Examinations.

5. A particle describes an orbit under the action of a central force; prove that its velocity at the distance $\frac{1}{u}$ from the centre of force is given by the formula $v^2 = h^2\left\{\left(\frac{du}{d\theta}\right)^2 + u^2\right\}$.

6. Find the centre of oscillation of a cylinder about a line in its surface parallel to the axis.

7. Find the centre of pressure of the sector of a circle whose centre is in the surface of the fluid, and axis vertical.

8. What must be the vertical angle of a cone which floats with its vertex downwards in order that the metacentre may be at the centre of the plane of floatation.

9. A small pencil of light is directly refracted at a plane surface, find the radius of the least circle of aberration.

10. Find the sun's declination when twilight is shortest in a given latitude.

CHEMISTRY.

Examiner, Professor MAXWELL SIMPSON.

PASS QUESTIONS.

N.B.—The following papers were common to Third Year's students in Arts, and First Year's students in Medicine and Engineering.

1. What quantity of oxygen is required for the complete combustion of 100 grains of pure carbon? What relation exists between the volume of the product formed and the volume of the oxygen consumed? How may the presence of carbon in carbon-dioxide be demonstrated?

2. What gas is evolved when common salt, sulphuric acid, and manganese dioxide are brought into contact? Explain the reaction by an equation and give the most characteristic properties of the gas. Explain also its behaviour towards ammonia and sulphide of hydrogen.

3. What gases are given off when nitric and sulphuric acids are respectively subjected to the action of metallic copper? Explain the reactions and state what you know about these gases.

4. State the effect of ammonio-nitrate of silver upon arsenic, arsenious and phosphoric acids respectively. How may the two latter acids be distinguished by further tests?

5. In what proportions by volume do elementary gases usually combine? Give examples.

6. How is ozone prepared, and in what respects does it differ from ordinary oxygen? How is it detected?

7. Explain the theory of types. Write the formulæ of the following bodies upon the water-type: potassium hydrate, anhydrous potash, sulphuric acid, alcohol, ether, glycol, glycerine.

8. What is meant by the term atomicity? Give the atomicity of the following bodies:—

Br, N, Zn, As, CN, (C_2H_5), (C_3H_5), (C_2H_4).

9. Give a short explanation of the following terms:—Isomerism, allotropism, polymerism.

10. How is potassium hydrate prepared? What impurities does it usually contain, and how would you remove them? How is it distinguished from sodium hydrate?

11. Describe and explain the preparation of calomel both by precipitation and sublimation. What is the action of a solution of potash upon it, and how may the presence of mercury be demonstrated?

12. Explain by equations the reactions which take place when the following compounds are brought into contact:—hydrochloric acid and mercuric oxide; hydrochloric acid and ferric oxide; sulphide of hydrogen and arsenious acid (acid solution); sulphide of hydrogen and ferric chloride (acid solution); common phosphate of soda and nitrate of silver.

13. How are oxalic ether, and iodide of ethyl prepared? What compound is formed when the latter is brought into contact with methylate of sodium?

14. How is aldehyde prepared? How would you detect it? Show by formulæ the relation it bears to alcohol and chloral.

15. What is meant by saturated and non-saturated organic compounds? Contrast the action of chlorine upon marsh gas, olefiant gas, and acetic acid.

16. Iodide of ethyl was heated for some time with an alcoholic solution of ammonia; the product was evaporated to dryness and heated with solid potash. Name the vapour that was evolved from the potash, write its formula and state how you would distinguish it from ammonia.

PRIZE QUESTIONS.

1. Explain what is now meant by the terms equivalent, atomic, and molecular weights as applied to the elementary bodies. Give the equivalent and atomic weights of each of the following elements:—chlorine, oxygen, nitrogen, phosphorus, mercury.

2. Write the graphic formulæ of the following compounds:—nitric, sulphuric and tribasic phosphoric acids, nitrate of baryta, ethyl-alcohol, glycol glycerine.

3. Describe and explain the process for the preparation of phosphoric acid from bone-ash. Give the formulæ of all the possible soda and lime salts of the tribasic acid.

4. How are terchloride and pentachloride of phosphorus prepared? Explain by equations the action of water upon each of these compounds.

5. How may antimonious (terchloride of antimony) cuprous and stannous chlorides be obtained? Represent by symbols the action of the first upon water, and the action of the last upon corrosive sublimate.

6. How is zinc ethyl prepared, and what is the action of hydrochloric acid upon it? Write the formula of the compound that is formed by the action of sodium upon iodide of ethyl.

7. A hydrocarbon gave on analysis 85·7 per cent. carbon, and 14·2 hydrogen. Its vapour-density was found to be 35·1 compared with hydrogen taken as unity. Name the hydrocarbon and write its formula. Give the calculation.

8. A monobasic acid gave on analysis—

Carbon, . . .	48·5 per cent.
Hydrogen, . .	8·1 ,,
Oxygen, . . .	43·4 ,,

Its silver salt yielded on ignition 59·6 per cent. of metallic silver. Name the acid and write its formula. Give the calculation (atomic weight of silver = 108).

9. How did Tollens succeed in preparing allylic alcohol directly from glycerine? Explain the reactions by equations.

10. Represent by graphic formulæ the constitution of the compound that is formed when allylic alcohol is subjected to the action of bromine.

What inference would you draw with regard to the nature of the alcohol from the behaviour of the bromine?

11. How may iodide of allyl be prepared from glycerine, and how may propylene gas be prepared from the iodide of allyle? Show the reactions by symbols.

12. How did Berthelot succeed in forming olefiant gas and hydrocyanic acid from their elements? Explain the reactions by equations.

NATURAL HISTORY.

Examiner, Professor REAY GREENE.

N.B.—The following Papers were common to Third Year's students in Arts, and First Year's students in Medicine.

BOTANY.

1. Under what larger groups may those orders of Thalamifloræ having axile placentas be arranged?

2. In what monopetalous plants are the stamens epigynous?

3. In what British orders of Apetalæ is the ovary inferior?

4. Give examples of monocotyledonous plants in which the perianth is

a.—absent,
b.—rudimentary,
c.—hexasepaloid,
d.—hexapetaloid,
e.—double.

5. What is meant by a prothallium? Explain its significance in the life-history of certain plants.

ZOOLOGY.

6. Give some account of the structure and development of the Gregarinæ.

7. Draw two rough diagrams showing the chief anatomical features brought into view by transverse and longitudinal sections of a sea-anemone.

8. What characters are common to the higher Mollusca (excluding the so-called Molluscoidea and Mollusca Acephala)?

9. Indicate the relative position of the principal membrane-bones of the crocodile's skull.

10. Contrast the brain of birds with that of mammals.

GEOLOGY AND MINERALOGY.

Examiner, Professor HARKNESS.

N.B.—The following Paper was common to Third Year's students in Arts, and First Year's students in Engineering.

1. What arrangements do ashes and lava assume in the structure of volcanic cones?

2. Describe the several kinds of glacial moraines and their origin.

3. Distinguish the principal kinds of coral formations, and their various origins.

4. What are the characters and compositions of Plutonic rocks? Describe some of the most important of these rocks.

5. What is the nature of Breccias? In what group of rocks are they most abundant in the British Isles?

6. What is the difference between stratification and lamination?

7. Indicate the geological and geographical position of the Huronian rocks; also their relation to the rocks on which they repose.

8. What is the lowest member of the Silurian rocks of Great Britain? Name some of the most important fossils which distinguish these rocks.

9. What are the strata which make up the Old Red Sandstones of the south of Ireland? Point out the relations which these bear to the rocks which support them.

10. Name the several forms of air-breathing animals which have left their remains in the Carboniferous formation?

11. What are the divisions of the Keuper series. Name the fossils characteristic thereof.

12. What is the nature and position of the Sussex marble?

13. Under what forms is the Miocene formation represented in the British Isles?

14. What is the nature of *Obsidian;* and under what circumstances does it occur?

15. Name the crystalline system to which *Idocrase* belongs, and what is the composition of this mineral?

16. What is the crystalline structure, hardness, and cleavage of Fluor spar?

SCHOLARSHIP EXAMINATIONS.

LITERARY SCHOLARSHIPS—FIRST YEAR.

GREEK.

Morning.

Examiner, DR. RYALL.

Translate:—

(A.) HOMER—*Iliad*, vi., 407–439.

δαιμόνιε, φθίσει σε τὸ σὸν μένος· οὐδ' ἐλεαίρεις
παῖδά τε νηπίαχον, καὶ ἔμ' ἄμμορον, ἣ τάχα χήρη
σεῦ ἔσομαι· τάχα γάρ σε κατακτανέουσιν Ἀχαιοὶ,
πάντες ἐφορμηθέντες· ἐμοὶ δέ κε κέρδιον εἴη,
σεῦ ἀφαμαρτούσῃ, χθόνα δύμεναι· οὐ γὰρ ἔτ' ἄλλη
ἔσται θαλπωρὴ, ἐπεὶ ἂν σύγε πότμον ἐπίσπῃς.
ἀλλ' ἄχε'· οὐδέ μοί ἐστι πατὴρ καὶ πότνια μήτηρ.
ἤτοι γὰρ πατέρ' ἀμὸν ἀπέκτανε δῖος Ἀχιλλεὺς,
ἐκ δὲ πόλιν πέρσεν Κιλίκων εὐναιετάωσαν,
Θήβην ὑψίπυλον· κατὰ δ' ἔκτανεν Ἠετίωνα,
οὐδέ μιν ἐξενάριξε· σεβάσσατο γὰρ τόγε θυμῷ·
ἀλλ' ἄρα μιν κατέκηε σὺν ἔντεσι δαιδαλέοισιν,
ἠδ' ἐπὶ σῆμ' ἔχεεν· περὶ δὲ πτελέας ἐφύτευσαν
Νύμφαι ὀρεστιάδες, κοῦραι Διὸς αἰγιόχοιο.
οἳ δέ μοι ἑπτὰ κασίγνητοι ἔσαν ἐν μεγάροισιν,
οἱ μὲν πάντες ἰῷ κίον ἤματι Ἄϊδος εἴσω·
πάντας γὰρ κατέπεφνε ποδάρκης δῖος Ἀχιλλεὺς,
βουσὶν ἐπ' εἰλιπόδεσσι καὶ ἀργεννῇς ὀΐεσσιν.

Appendix D.

Scholarship Examinations.

μητέρα δ', ἣ βασίλευεν ὑπὸ Πλάκῳ ὑληέσσῃ,
τὴν ἐπεὶ ἂρ δεῦρ' ἤγαγ' ἅμ' ἄλλοισι κτεάτεσσιν,
ἂψ ὅγε τὴν ἀπέλυσε λαβὼν ἀπερείσι' ἄποινα·
πατρὸς δ' ἐν μεγάροισι βάλ' Ἄρτεμις ἰοχέαιρα.
Ἕκτορ, ἀτὰρ σύ μοί ἐσσι πατὴρ καὶ πότνια μήτηρ,
ἠδὲ κασίγνητος, σὺ δέ μοι θαλερὸς παρακοίτης.
ἀλλ' ἄγε νῦν ἐλέαιρε, καὶ αὐτοῦ μίμν' ἐπὶ πύργῳ,
μὴ παῖδ' ὀρφανικὸν θήῃς, χήρην τε γυναῖκα·
λαὸν δὲ στῆσον παρ' ἐρινεόν, ἔνθα μάλιστα
ἀμβατός ἐστι πόλις, καὶ ἐπίδρομον ἔπλετο τεῖχος.
τρὶς γὰρ τῇγ' ἐλθόντες ἐπειρήσανθ' οἱ ἄριστοι,
ἀμφ' Αἴαντε δύω καὶ ἀγακλυτὸν Ἰδομενῆα,
ἠδ' ἀμφ' Ἀτρείδας καὶ Τυδέος ἄλκιμον υἱόν·
ἤ πού τίς σφιν ἔνισπε θεοπροπίων εὖ εἰδώς,
ἤ νυ καὶ αὐτῶν θυμὸς ἐποτρύνει καὶ ἀνώγει.

1. Parse fully the following:—*δύμεναι, ἐπίσπῃς, κατέκηε, ἰῷ, κατέπεφνε, ὀΐεσσι, θείης, κατακτανέουσιν.*

2. Derive or decompound *νηπίαχος, ἄμμορον, θαλπώρη, ἐξενάριξε, ποδάρκης, εἰλιπόδεσσι, ἀπερείσια, ἰοχέαιρα, ἀμβατός, ἐπίδρομον.*

3. Explain the phrase *οἱ ἀμφ' Αἴαντε*, and show that *πότνια* is not a feminine adjective.

4. What were the three grand divisions of the Greeks, as to origin and dialect? What is your notion of Homer's dialect?

(B.) EURIPIDES—*Phœnissæ*, 1019–1046.

ἔβας, ἔβας, στρ.
ὦ πτεροῦσσα, γᾶς λόχευμα
νερτέρου τ' Ἐχίδνας,
Καδμείων ἁρπαγά,
πολύστονος πολύφθορος,
μιξοπάρθενος,
δάιον τέρας,
φοιτάσι πτεροῖς
χαλαῖσί τ' ὠμοσίτοις·
Διρκαίων ἅ ποτ' ἐκ
τόπων νέους πεδαίρουσ'
ἄλυρον ἀμφὶ μοῦσαν
ὀλομέναν τ' Ἐρινὺν
ἔφερες ἔφερες ἄχεα πατρίδι
φόνια· φόνιος ἐκ θεῶν,
ὃς τάδ' ἦν ὁ πράξας.
ἰάλεμοι δὲ ματέρων,
ἰάλεμοι δὲ παρθένων
ἐστέναζον οἴκοις·
ἰήιον βοὰν βοάν,
ἰήιον μέλος μέλος
ἄλλος ἄλλ' ἐπωτότυζε
διαδοχαῖς ἀνὰ πτόλιν.
βροντᾷ δὲ στεναγμὸς
ἀχά τ' ἦν ὅμοιος,
ὁπότε πόλεος ἀφανίσειεν
ἁ πτεροῦσσα παρθένος τιν' ἀνδρῶν.
χρόνῳ δ' ἔβα ἀντ.
Πυθίαις ἀποστολαῖσιν
Οἰδίπους ὁ τλάμων
Θηβαίαν τάνδε γᾶν
τότ' ἀσμένοις, πάλιν δ' ἄχη.

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1. Point out all the purely Doric forms in the extract, giving their equivalents in the common dialect. How do you account for the prevalence of the Doric in the chorus of Greek Tragedy?

2. Who is meant by the *πτεροῦσσα παρθένος*? Explain the allusions to her story in the extract.

3. Explain the terms *ἰάλεμοι* and *ἰήϊον*, and the construction of *ἀσμένοις*, in the last line.

4. Define *cœsura;* where is it placed in trimeter Iambics?

Afternoon.

(1.) *Δέδοικα μὴ, ἂν ἅπαξ μάθωμεν ἀργοὶ ζῆν, καὶ ἐν ἀφθόνοις βιοτεύειν, καὶ Μήδων δὲ καὶ Περσῶν καλαῖς καὶ μεγάλαις γυναιξὶ καὶ Παρθένοις ὁμιλεῖν, μὴ, ὥσπερ οἱ λωτοφάγοι, ἐπιλαθώμεθα τῆς οἴκαδε ὁδοῦ.*—(Xenoph.—*Anab.*, iii. 2). Translate these words, and explain the allusion. Of what verb is *δέδοικα* the perfect tense, and what is the other perfect of the same verb? Write down the several persons of the singular and plural of the latter. Explain the construction *τῆς οἴκαδε ὁδοῦ.*

(2.) *Ἐπεὶ δὲ οὗτοι ἐγένοντο ὑπὲρ τῶν ἑπομένων πολεμίων, οὐκέτι ἐπετίθεντο οἱ πολέμιοι τοῖς καταβαίνουσι, δεδοικότες μὴ ἀποτμηθείησαν, καὶ ἀμφοτέρωθεν αὐτῶν γένοιντο οἱ πολέμιοι*—(iii. 4). Translate, and state why *μὴ* is followed by the optative mood in this instance, and in the foregoing extract by the subjunctive.

(3.) *Ἐρώτα τοίνυν αὐτοὺς, ἔφη, τί ἀντιτετάχαται, καὶ χρῄζουσιν ἡμῖν πολέμιοι εἶναι; οἱ δ' ἀπεκρίναντο· ὅτι καὶ ὑμεῖς ἐπὶ τὴν ἡμετέραν χώραν ἔρχεσθε.*—(iv. 8). What part of the verb is *ἀντιτετάχαται*?

(4.) ΕΡΜ. *Μήδαμῶς, ὦ 'γαθέ· οὐ γὰρ πάντες εἰσὶν ἐπιτήδειοι πρὸς οἰμωγήν· ἀλλ' ἔα τὰ ὀργίλα ταῦτα, καὶ μειρακιώδη, καὶ τὸν Πλοῦτον παράλαβε· οὔτοι ἀπόβλητά εἰσι τὰ δῶρα τὰ παρὰ τοῦ Δίος.* ΠΛΟΥΤ. *βούλει, ὦ Τίμων, δικαιολογήσωμαι πρὸς σέ; ἢ χαλεπαίνεις μοι λέγοντι;*—(Luc.—*Timon*). Distinguish between *ἄλλα* and *ἀλλά*—*οὔτοι* and *οὗτοι*. Why has *ἀπόβλητά* two accents, and why has the word *εἰσι* no accent here, while it has one where it previously occurs in the same sentence? Explain the formation and meaning of verbal adjectives in *τος* and *τεος*. Why is *δικαιολογήσωμαι* in the subjunctive mood?

(B).—Translate the following sentences into Greek:—

1. Whoever is caught, shall be punished.
2. The son of the king has been entrusted with the government.
3. I wish you had not forgotten your former virtue.
4. He told me that his son had been too well brought up to associate with such people.
5. All people aim at becoming happy.
6. The mother took the child by the ear, and washed its face.

(C.)—(1.) Give a short account of the origin, progress, and close of the Peloponnesian War, with dates.

(2.) Describe the positions of the following places:—Sardis, Cunaxa, Sinope, Ephesus, Trapezus.

Translate into Greek:—

It is easy to conceive how, under any less beneficent disposition of the masses of hill, the continents of the earth might either have been covered with enormous lakes, as parts of North America actually are covered, or have become wildernesses of pestiferous marsh, upon which

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the water would have dried as it fell, leaving them for great part of the year desert. Such districts do exist, and exist in vastness: the whole earth is not prepared for the habitation of man; only certain small portions are prepared for him—the houses, as it were, of the human race, from which they are to look abroad upon the rest of the world, not to wonder or complain that it is not all house, but to be grateful for the kindness of the admirable building in the house itself as compared with the rest. It would be as absurd to think it an evil that all the world is not fit for us to inhabit, as to think it an evil that the globe is no larger than it is. As much as we shall ever need is evidently assigned to us for our dwelling-place: the rest, covered with rolling waves or drifting sands, fretted with ice or crested with fire, is set before us for contemplation in uninhabitable magnificence; and that part which we are enabled to inhabit owes its fitness for human life chiefly to its mountain ranges, which, throwing the superfluous rain off as it falls, collect it in streams and lakes, and guide it into given places and in given directions; so that men can build their cities in the midst of fields which they know will be always fertile, and establish the lines of their commerce upon streams that will never fail.

LATIN.

Examiner, Professor LEWIS.

1. Give an account of Horace's journey to Brundisium, and draw a map of Italy marking in it all the towns through which he passed.
2. Explain the Choriambic and Alcaic metres.
3. Narrate the life of Cicero.
4. What are the meanings and constructions of the conjunction *ut?*
5. Write the perfects and supines of *lavo, poto, misceo, mordeo, fingo, tollo.*

Re-translate into Latin:—

After you left me, I received letters from Rome, from which I perceive, that I must end my days in this calamity; and to speak the truth (which you will take in good part), if there be any hopes of my return, you who love me so well, would never have left the city at such a conjuncture: but I say no more, lest I be thought either ungrateful, or desirous to involve my friends too in my ruin: one thing I beg; that you would not fail, as you have given your word, to come to me wherever I shall happen to be, before the 1st of January.

THE ENGLISH LANGUAGE.

Examiner, Professor ARMSTRONG.

COMPOSITION.

1. Write an essay on the character of any great Englishman, associated with the history of the country, with which you are familiar.

HISTORY AND GRAMMAR OF THE LANGUAGE.

1. Name the principal foreign influences which have affected the English language, and state the periods at which they have operated.
2. Explain the manner in which these foreign influences have contributed to the formation of the language.

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3. Give the substance of Bede's account of the early Teutonic settlements in Great Britain.

4. Give an account of the formation of the Norman-French tongue.

5. Name the several periods in the grammatical development of the language, according to Dr. Craik's division, and state some of the grammatical peculiarities by which they are distinguished.

6. Give an account of the early dialects of English, and of their peculiarities.

7. To what periods in the history of the language (according to Dr. Craik's division) do the following extracts belong?—

(*a.*) " A meller was there dwellyng many a day;
As eny pecok he was prowd and gay;
Pipen he coude, and fisshe, and nettys beete,
And turne cuffes, wrastle wel, and scheete."

(*b.*) " He forbead tha heortas, swylce eac tha baras. Swa swidhe he lufode tha heodeor swylce he wære heora fæder."

(*c.*) " Nu, brotherr Walterr, brotherr min affterr the flaeshess kinde;
And brotherr min i Crisstenndom thurrh fulluhht and thurrh trowwthe;
And brotherr min i Godess hus, yet o the thride wise," &c.

Make a modern English prose paraphrase of (*a.*) and (*c.*), and comment upon the peculiarities of the spelling in (*c*).

HISTORY AND GEOGRAPHY.

Examiner, Professor ARMSTRONG.

HISTORY OF GREECE AND ROME.

1. Give an account of the constitution and duties of the Amphictyonic Council.

2. Give an account of the Battle of Mycale, and its results.

3. Give an account of the origin and operations of the Confederacy of Delos.

4. Give an account of the government and proceedings of the Four Hundred.

5. What were the Licinian Rogations, and what were the events which led to their promulgation?

6. What were the causes which led to the Second Samnite War?

7. Describe the operations of Pyrrhus in Italy.

ANCIENT AND MODERN GEOGRAPHY.

1. Name the principal ancient towns of Greece and Italy.

2. Give the ancient names of the chief rivers of Spain and Gaul, and describe their courses.

3. Name the principal towns of the following counties, departments, and province:—Berkshire; Shropshire; Tyrone; Argyleshire; Ille et Vilaine; Calvados; Var; Andalucia.

4. Name the principal rivers, towns, and mountain ranges of Bengal.

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SECOND AND THIRD YEARS.

GREEK.

Examiner, Dr. RYALL.

Morning.

1. Translate :—

(A.) SOPHOCLES—*Antigone*.

(*a.*) *ὦ κοινὸν αὐτάδελφον Ἰσμήνης κάρα,*
ἆρ' οἶσθ' ὅτι Ζεὺς τῶν ἀπ' Οἰδίπου κακῶν
ὁποῖον οὐχὶ νῷν ἔτι ζώσαιν τελεῖ;
οὐδεν γὰρ οὔτ' ἀλγεινὸν οὔτ' ἄτης ἄτερ
οὔτ' αἰσχρὸν οὔτ' ἄτιμόν ἐσθ', ὁποῖον οὐ
τῶν σῶν τε κἀμῶν οὐκ ὄπωπ' ἐγὼ κακῶν.—(1–6.)

(*b.*) *ἀλλ' ἐννοεῖν χρὴ τοῦτο μὲν γυναῖχ' ὅτι*
ἔφυμεν, ὡς πρὸς ἄνδρας οὐ μαχουμένα·
ἔπειτα δ' οὕνεκ' ἀρχόμεσθ' ἐκ κρεισσόνων,
καὶ ταῦτ' ἀκούειν κἄτι τῶνδ' ἀλγίονα.—(61–64.)

(*c.*) *ἀμήχανον δὲ παντὸς ἀνδρὸς ἐκμαθεῖν*
ψυχήν τε καὶ φρόνημα καὶ γνώμην, πρὶν ἂν
ἀρχαῖς τε καὶ νόμοισιν ἐντριβὴς φανῇ.
ἐμοὶ γὰρ ὅστις πᾶσαν εὐθύνων πόλιν
μὴ τῶν ἀρίστων ἅπτεται βουλευμάτων,
ἀλλ' ἐκ φόβου του γλῶσσαν ἐγκλήσας ἔχει,
κάκιστος εἶναι νῦν τε καὶ πάλαι δοκεῖ.—(175–181.)

(*d.*) *πάτερ, σός εἰμι· καὶ σύ μοι γνώμας ἔχων*
χρηστὰς ἀπορθοῖς, αἷς ἔγωγ' ἐφέψομαι.
ἐμοὶ γὰρ οὐδεὶς ἀξίως ἔσται γάμος
μείζων φέρεσθαι σοῦ καλῶς ἡγουμένου.—(626–629.)

(*e.*) *σὺ καὶ δικαίων ἀδίκους*
φρένας παρασπᾷς ἐπὶ λώβᾳ·
σὺ καὶ τόδε νεῖκος ἀνδρῶν
ξύναιμον ἔχεις ταράξας.—(778–781.)

(*f.*) *καὶ ταῦτα τῆς σῆς ἐκ φρενὸς νοσεῖ πόλις.*
βωμοὶ γὰρ ἡμῖν ἐσχάραι τε παντελεῖς
πλήρεις ὑπ' οἰωνῶν τε καὶ κυνῶν βορᾶς
τοῦ δυσμόρου πεπτῶτος Οἰδίπου γόνου.
κᾆτ' οὐ δέχονται θυστάδας λιτὰς ἔτι
θεοὶ παρ' ἡμῶν οὐδὲ μηρίων φλόγα,
οὐδ' ὄρνις εὐσήμους ἀπορροιβδεῖ βοάς,
ἀνδροφθόρου βεβρῶτες αἵματος λίπος.—(982–989.)

2. Explain the following terms and expressions :—*δεξιόσειρος, αὐτόχειρ μιάσμα, φυγὰς κατελθών, μισθαρνεῖν, ἄλημα, ὑπίλλειν στόμα, πάρεδρος, τροχοί ἁμιλλητῆρες.*

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3. Explain the following technical terms:—Πρόλογος, Πάροδος, Επεισόδιον, Στάσιμον, Ἔξοδος, Κομμός.

(B.) HOMER—*Odyssey*.

1. (*a*.) *νῦν μὲν δή σευ, ξεῖνέ γ᾽, ὀΐω πειρήσεσθαι,*
εἰ ἐτεὸν δὴ κεῖθι σὺν ἀντιθέοις ἑτάροισιν
ξείνισας ἐν μεγάροισιν ἐμὸν πόσιν, ὡς ἀγορεύεις.
εἰπέ μοι ὁπποῖ᾽ ἄσσα περὶ χροῒ εἵματα ἕστο,
αὐτός θ᾽ οἷος ἔην, καὶ ἑταίρους, οἵ οἱ ἕποντο.
xix., 215–219.

(*b*.) *πῶς γὰρ ἐμεῦ σὺ, ξεῖνε, δαήσεαι, εἴ τι γυναικῶν*
ἀλλάων περίειμι νόον καὶ ἐπίφρονα μῆτιν,
εἴ κεν ἀϋσταλέος, κακὰ εἱμένος, ἐν μεγάροισιν
δαινύῃ; ἄνθρωποι δὲ μινυνθάδιοι τελέθουσιν.
ὃς μὲν ἀπηνὴς αὐτὸς ἔῃ καὶ ἀπηνέα εἰδῇ,
τῷ δὲ καταρῶνται πάντες βροτοὶ ἄλγε᾽ ὀπίσσω
ζωῷ· ἀτὰρ τεθνεῶτί γ᾽ ἐφεψιόωνται ἅπαντες.
Ib., 325–331.

(*c*.) *τὸν μὲν ἄρ᾽ Αὐτολύκου παῖδες φίλοι ἀμφεπένοντο,*
ὠτειλὴν δ᾽ Ὀδυσῆος ἀμύμονος, ἀντιθέοιο,
δῆσαν ἐπισταμένως, ἐπαοιδῇ δ᾽ αἷμα κελαινὸν
ἔσχεθον, αἶψα δ᾽ ἵκοντο φίλου πρὸς δώματα πατρός.
τὸν μὲν ἄρ᾽ Αὐτόλυκός τε καὶ υἱέες Αὐτολύκοιο
εὖ ἰησάμενοι, ἠδ᾽ ἀγλαὰ δῶρα πορόντες,
καρπαλίμως χαίροντα φίλην χαίροντες ἔπεμπον
εἰς Ἰθάκην· τῷ μέν ῥα πατὴρ καὶ πότνια μήτηρ
χαῖρον νοστήσαντι, καὶ ἐξερέεινον ἕκαστα,
οὐλὴν ὅττι πάθοι.
Ib., 455–464.

(*d*.) *εὖτ᾽ Ἀφροδίτη δῖα προσέστιχε μακρὸν Ὄλυμπον,*
κούρῃς αἰτήσουσα τέλος θαλεροῖο γάμοιο,
ἐς Δία τερπικέραυνον—ὁ γάρ τ᾽ εὖ οἶδεν ἅπαντα,
μοῖράν τ᾽ ἀμμορίην τε καταθνητῶν ἀνθρώπων—
τόφρα δὲ τὰς κούρας Ἅρπυιαι ἀνηρείψαντο,
καί ῥ᾽ ἔδοσαν στυγερῇσιν Ἐρινύσιν ἀμφιπολεύειν.
xx., 73–78.

2. Explain the following grammatical forms, and give their equivalents in the common dialect:—*παρφάσθαι, κέκασθαι, βρίθησι, ἀλλνέσκον, ἐφεψιόωνται, περάασκε.*

3. Note all the places in the above extracts where the introduction of ϝ seems necessary or admissible.

4. Explain fully the use of the suffix *φιν* in the Homeric declensions.

(C.) Translate into four senarii:—

There are three virtues, son, which it behoves you to exercise; to honour both the gods and the parents who begat you, and the common laws of Greece; and, doing these things, you shall ever have the noblest crown of glory.

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Scholarship Examinations.

Afternoon.

Translate :—

(A.) HERODOTUS, Book I.

1. (*a.*) ἐπολέμησε Μιλησίοισι, παραδεξάμενος τὸν πόλεμον παρὰ τοῦ πατρός. ἐπελαύνων γὰρ ἐπολιόρκεε τὴν Μίλητον τρόπῳ τοιῷδε· ὅκως μὲν εἴη ἐν τῇ γῇ καρπὸς ἁδρὸς, τηνικαῦτα ἐσέβαλλε τὴν στρατιήν· ἐστρατεύετο δὲ ὑπὸ συρίγγων τε καὶ πηκτίδων, καὶ αὐλοῦ γυναικηΐου τε καὶ ἀνδρηΐου. ὡς δὲ ἐς τὴν Μιλησίην ἀπίκοιτο, οἰκήματα μὲν τὰ ἐπὶ τῶν ἀγρῶν οὔτε κατέβαλλε, οὔτε ἐνεπίμπρη, οὔτε θύρας ἀπέσπα, ἔα δὲ κατὰ χώρην ἑστάναι· ὁ δὲ τά τε δένδρεα καὶ τὸν καρπὸν τὸν ἐν τῇ γῇ ὅκως διαφθείρειε, ἀπαλλάσσετο ὀπίσω.—(17.)

(*b.*) ἀείσας δὲ, ὑπεδέκετο ἑωυτὸν κατεργάσεσθαι. καὶ τοῖσι ἐσελθεῖν γὰρ ἡδονὴν, εἰ μέλλοιεν ἀκούσεσθαι τοῦ ἀρίστου ἀνθρώπων ἀοιδοῦ, ἀναχωρῆσαι ἐκ τῆς πρύμνης ἐς μέσην νέα. τὸν δὲ ἐνδύντα τε πᾶσαν τὴν σκευὴν καὶ λαβόντα τὴν κιθάρην, στάντα ἐν τοῖσι ἑδωλίοισι, διεξελθεῖν νόμον τὸν ὄρθιον. τελευτῶντος δὲ τοῦ νόμου, ῥῖψαί μιν ἐς τὴν θάλασσαν ἑωυτὸν, ὡς εἶχε, σὺν τῇ σκευῇ πάσῃ.—(24.)

(*c.*) εἰ δὲ δὴ ἐθελήσει τοὔτερον τῶν ἐτέων μηνὶ μακρότερον γίνεσθαι, ἵνα δὴ αἱ ὧραι συμβαίνωσι παραγινόμεναι ἐς τὸ δέον, μῆνες μὲν παρὰ τὰ ἑβδομήκοντα ἔτεα οἱ ἐμβόλιμοι γίνονται τριήκοντα πέντε· ἡμέραι δὲ ἐκ τῶν μηνῶν τούτων, χίλιαι πεντήκοντα. τουτέων τῶν ἁπασέων ἡμερέων τῶν ἐς τὰ ἑβδομήκοντα ἔτεα ἐουσέων πεντήκοντα καὶ διηκοσίων καὶ ἑξακισχιλίων καὶ δισμυρίων, ἡ ἑτέρη αὐτέων τῇ ἑτέρῃ ἡμέρῃ τὸ παράπαν οὐδὲν ὁμοῖον προσάγει πρῆγμα.—(32.)

(*d.*) τοῖσι μὲν δὴ κατεστήκεε πολιορκίη, Κροῖσος δὲ δοκέων οἱ χρόνον ἐπὶ μακρὸν ἔσεσθαι τὴν πολιορκίην, ἔπεμπε ἐκ τοῦ τείχεος ἄλλους ἀγγέλους ἐς τὰς συμμαχίας. οἱ μὲν γὰρ πρότερον διεπέμποντο, ἐς πέμπτον μῆνα προερέοντες συλλέγεσθαι ἐς Σάρδις· τούτους δὲ ἐξέπεμπε, τὴν ταχίστην δέεσθαι βοηθέειν, ὡς πολιορκεομένου Κροίσου.—(81.)

(*e.*) μεμηχάνηται δὲ οὕτω τοῦτο τὸ τεῖχος, ὥστε ὁ ἕτερος τοῦ ἑτέρου κύκλος τοῖσι προμαχεῶσι μούνοισί ἐστι ὑψηλότερος. τὸ μέν κού τι καὶ τὸ χωρίον συμμαχέει κολωνὸς ἐὸν, ὥστε τοιοῦτο εἶναι· τὸ δὲ καὶ μᾶλλόν τι ἐπετηδεύθη, κύκλων ἐόντων τῶν συναπάντων ἑπτά, ἐν δὲ τῷ τελευταίῳ τὰ βασιλήϊα ἔνεστι καὶ οἱ θησαυροί.—(98.)

2. Express the following words in the Ionic dialect:—πῶς, λαός, ὁράω, μόνος, θαῦμα, αὐτοῦ οὖν—and convert the following Ionic forms into the common dialect: ἐπεάν, θηωρίη, ὅτεῳ, ἀποκληΐω, πλεῦνας.

3. Give a short sketch of the life of Herodotus, mentioning the sources from which he derived the materials for his history.

(B.) PLATO—*Apologia.*

1. (*a.*) εἰ δ' αὖ οἷον ἀποδημῆσαί ἐστιν ὁ θάνατος ἐνθένδε εἰς ἄλλον τόπον, καὶ ἀληθῆ ἐστὶ τὰ λεγόμενα, ὡς ἄρα ἐκεῖ εἰσὶν ἅπαντες οἱ τεθνεῶτες, τί μεῖζον ἀγαθὸν τούτου εἴη ἄν, ὦ ἄνδρες δικασταί; εἰ γάρ τις ἀφικόμενος εἰς Ἅιδου, ἀπαλλαγεὶς τούτων τῶν φασκόντων δικαστῶν εἶναι, εὑρήσει τοὺς ὡς ἀληθῶς δικαστάς, οἵπερ καὶ λέγονται ἐκεῖ δικάζειν, Μίνως τε καὶ Ῥαδάμανθυς καὶ Αἰακὸς καὶ Τριπτόλεμος, καὶ ἄλλοι, ὅσοι τῶν ἡμιθέων δίκαιοι ἐγένοντο ἐν τῷ ἑαυτῶν βίῳ, ἆρα φαύλη ἂν εἴη ἡ ἀποδημία; ἢ αὖ Ὀρφεῖ ξυγγενέσθαι καὶ Μουσαίῳ καὶ Ἡσιόδῳ καὶ Ὁμήρῳ ἐπὶ πόσῳ ἄν τις δέξαιτ' ἂν ὑμῶν; ἐγὼ μὲν γὰρ πολλάκις ἐθέλω τεθνάναι, εἰ ταῦτ' ἐστὶν ἀληθῆ· ἐπεὶ ἔμοιγε καὶ αὐτῷ θαυμαστὴ ἂν εἴη ἡ διατριβὴ αὐτόθι, ὁπότε ἐντύχοιμι Παλαμήδει καὶ Αἴαντι τῷ Τελαμῶνος καὶ εἴ τις ἄλλος τῶν παλαιῶν διὰ κρίσιν ἄδικον τέθνηκεν.

(*b.*) ἀλλὰ γὰρ ἤδη ὥρα ἀπιέναι, ἐμοὶ μὲν ἀποθανουμένῳ, ὑμῖν δὲ βιωσομένοις· ὁπότεροι δὲ ἡμῶν ἔρχονται ἐπὶ ἄμεινον πρᾶγμα, ἄδηλον παντὶ πλὴν ἢ τῷ θεῷ.

2. (*a.*) κᾆπειτα ἐπειρώμην αὐτῷ δεικνύναι, ὅτι οἴοιτο μὲν εἶναι σοφός, εἴη δ' οὔ.

(*b.*) οἴονται γὰρ με ἑκάστοτε οἱ παριόντες ταῦτα αὐτὸν εἶναι σοφόν ἃ ἂν ἄλλον ἐξελέγξω.

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Scholarship Examinations.

Why is *σοφός* in the nominative in (*a*), and in the accusative in (*b*)?

3. State the meaning of each of the following forensic terms and phrases:—

γραφή—ἀντιγραφή—ἀποψηφίσασθαι—καταψηφίσασθαι—τιμῶμαι—ἀντιτιμῶμαι—ἐρήμην κατηγορεῖν—δίκην φευγειν—δίκην ἀποφεύγειν—δίκην οφλισκάνειν.

(C.) Translate into Greek:—

In the plain which he had now reached, he halted for a whole day, and then resuming his march, proceeded for three days up the valley, on the right bank of the river, without encountering any difficulty. Then the natives met him with branches of trees in their hands, and wreaths on their heads in token of peace; they spoke fairly, offered hostages, and wished, they said, neither to do the Carthaginians any injury, nor to receive any from them.

LATIN.

Examiner, Professor LEWIS.

Translate:—

VIRGIL—*Eclogue* iv., 34-45.

Alter erit tum Tiphys, et altera quae vehat Argo
Delectos heroas; erunt etiam altera bella,
Atque iterum ad Troiam magnus mittetur Achilles.
Hinc, ubi iam firmata virum te fecerit aetas,
Cedet et ipse mari vector, nec nautica pinus
Mutabit merces: omnis feret omnia tellus.
Non rastros patietur humus, non vinea falcem;
Robustus quoque iam tauris iuga solvet arator;
Nec varios discet mentiri lana colores,
Ipse sed in pratis aries iam suave rubenti
Murice, iam croceo mutabit vellera luto;
Sponte sua sandyx pascentes vestiet agnos.

Translate into Latin hexameters:—

O thou that with surpassing glory crown'd,
Look'st from thy sole dominion like the God
Of this new world; at whose sight all the stars
Hide their diminish'd heads; to thee I call,
But with no friendly voice; and add thy name,
O sun, to tell thee how I hate thy beams,
That bring to my remembrance from what state
I fell, how glorious once above thy sphere;
Till pride and worse ambition threw me down,
Warring in heav'n against heav'n's matchless king.

Translate into Latin prose:—

In order likewise to come at a true knowledge of ourselves, we should consider on the other hand how far we may deserve the praises and approbations which the world bestow upon us: whether the actions they celebrate proceed from laudable and worthy motives: and how far we are really possessed of the virtues which gain us applause among those with whom we converse. Such a reflection is absolutely necessary, if we consider how apt we are either to value or condemn ourselves by the opinions of others, and to sacrifice the report of our own hearts to the judgment of the world.

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THE ENGLISH LANGUAGE AND ENGLISH LITERATURE, &c.

Examiner, Professor ARMSTRONG.

1. State what classes of words in the English language are generally of Romance origin; and give examples of the several classes.

2. State the chief points of grammatical difference between the Northern and Southern Old English Dialects; and give some account of the literary relics of each dialect.

3. Give an account of the English of the Third and Fourth periods.

4. Name and decline the A. S. personal pronouns.

5. Make a metrical analysis of the following passage, stating the metrical and grammatical rules which guide you; and paraphrase the passage in Modern English prose:—

"His purchas was wel better than his rente.
And rage he couthe and pleyen as a whelpe,
In love-dayes couthe he mochel helpe.
For ther he was not like a cloysterer,
With a thredbare cope as is a poure scoler,
* * * *
Of double worstede was his semy-cope,
That rounded as a belle out of the presse."—

Which of his characters is Chaucer here describing?

6. Describe the part taken by Englishmen in the earlier Crusades.

7. State what appear to you to have been the influences of the Crusades upon the literature and language of England.

8. Recount the principal events of the reign of Edward III.

9. What were the leading provisions of Magnæ Charta?

10. Give an account of the history and character of the Normans prior to their conquest of England.

MODERN LANGUAGES.

Examiner, Professor DE VERICOUR.

N.B.—This paper was set to all candidates for Second and Third Years' Scholarship and Senior Scholarship in Modern Languages, Literature and History in Arts, the Scholarships of the Second Year in Medicine and Engineering.

Translate into French:—

Mont-Blanc is the monarch of mountains,
They crown'd him along ago
On a throne of rocks, in a robe of clouds,
With a diadem of snow.
Around his waist are forests braced,
The avalanche in his hand;
But ere it fall, that thundering ball
Must pause for my command.
The glacier's cold and restless mass
Moves onward day by day;
But I am he who bids it pass,
Or with its ice delay.
I am the spirit of the place,
Could make the mountain bow,
And quiver to his cavern'd base—
And what with me would'st thou?

BYRON: *Manfred.*

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Scholarship Examinations.

Translate into French, German, or Italian:—

Germany is a large and heterogeneous country. It is washed by the waves of the Baltic, German, and Adriatic seas; it lies between the woods of Poland and the marshes of Holland, between the Alpine ranges and the Danish plains; it shakes hands with Scandinavia, with Italy, and with France, and thus presents an area of many peoples united by a common language and a certain community of thought. As the land is, so is the literature: a vast heterogeneous mass, not easily reducible to any one distinct formula. To select a characteristic from such varieties, and say *that* is the spirit of German literature, must, on the face of it, be an arbitrary proceeding: whatever we select will assuredly be liable to numerous counter-statements. Nevertheless with a full consciousness of what there is of arbitrary in the attempt, it will be necessary to make one here, if only for the sake of brevity. Let us then resolutely overlook all varieties, and fix our attention solely on the dominant type—that which has persisted through history, and is never wholly obscured by the temporary tendencies of the time. This dominant and persistent characteristic, which may be taken as the spirit of German literature, is Idealism.

1. State the cases when the negative *ne* is applied in French without there being a corresponding negative in English; give examples.

2. Explain the difference between:—

amande.	amende.
chaîne.	chêne.
faîte.	fête.
propreté.	propriété.
tache.	tâche.
repartir	répartir

3. What was the influence of the reign of Francis I. on French literature?

4. Mention some of the French Onomatopœia.

5. Give an account of the life and works of Lessing, and of their influence on German literature.

6. State what you know of the life and works of Alfieri and Silvio Pellico.

SCIENCE SCHOLARSHIPS—FIRST YEAR.

MATHEMATICS.

Examiner, Professor NIVEN.

FIRST PAPER.*

1. Equal triangles which stand on same base and on the same side of it, are between the same parallels.

2. Bisect a triangle by a line drawn from a given point in one of its sides.

3. If a straight line AB be bisected in C and produced to D, show that sq : on AD+sq : on BD=2 sq : on AC+2 sq : on CD.

4. Given the base of a triangle and the point of intersection of the perpendiculars from the angles on the sides, describe the triangle.

5. In equal circles the chords which subtend equal angles at the centres or circumferences are equal.

6. If there be two chords in a circle, one of which is double the other, show that the larger circumference cut off by the latter is greater than half that cut off by the former.

7. Two circles, whose centres are A, B, cut at right angles, and any line is drawn through one of the points of intersection meeting the

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* The University Prizes in Geometry were awarded for answering in this Paper.

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former in P and the other in Q; show that AP, BQ meet on the circumference of the circle on AB as diameter.

8. Describe an isosceles triangle having each angle at the base double the vertical angle.

9. The lines bisecting the angles of a triangle meet the circumference of the circumscribing circle in points, the lines joining which are parallel to the bisectors of the exterior angles of the triangle.

10. Two triangles which are equiangular are also similar.

11. If lines be drawn through the angles of a triangle ABC, through any internal point O, and produced to meet the sides in D, E, F respectively, and if $\triangle BED = \triangle FDC$, show that the $\triangle ABE = \triangle AFC$.

SECOND PAPER.

1. A watch which loses at the rate of 20 seconds per hour is set right at 12.15 P.M. on Monday, what is the time when the watch indicates 7 P.M. on Tuesday?

2. An investment which would pay, if there were no income tax, 6·24 per cent. pays only 5·032 in consequence of income tax; how much is the latter in the pound?

3. Find the H. C. D. of $x^5+2x^4+3x^2+2$ and $x^4+x^3+x^2+1$, and also the L. C. M. of $2x^2-2$, $3x^3+3$, $2x^2-2x-4$, x^2-x+1.

4. Simplify the fractions $\dfrac{x^2-x+1}{x^3-2x^2-2x+1}$ and

$$\frac{(2x^2-2)(3x^3-3)}{18}\left(\frac{1}{x^2-1}-\frac{x^2+2}{x^4+x^2+1}\right)\left(1+\frac{1}{x-1}-\frac{1}{x+2}\right).$$

5. If $x=Bc-Cb$, $y=Ca-Ac$, $z=Ab-Ba$, find the value of $xy+ab(A^2+B^2+C^2)+AB(a^2+b^2+c^2)$, and $x^2+a^2(A^2+B^2+C^2)+A^2(a^2+b^2+c^2)$; show also that if $Aa+Bb+Cc=0$ the former of these quantities is zero and the latter $(A^2+B^2+C^2)(a^2+b^2+c^2)$.

6. Solve these equations—

$$(1.)\quad \frac{7x-10}{42}-\frac{x+10}{4x-32}=\frac{x-6}{6}.$$

$$(2.)\quad \sqrt{4a-b+x}=2\sqrt{x}-\sqrt{x-b}.$$

$$(3.)\quad \left.\begin{array}{l} 3y+\dfrac{7x-6}{2x-3}=2+\dfrac{36xy+18}{12x-18} \\ x-3:3y+4::2x-7:6y+5 \end{array}\right\}.$$

7. You can buy from a wine merchant 10 dozen sherry and 12 dozen claret for £48, and 5 dozen more sherry can be had for £45 than of claret for £50. Required the price of each per dozen.

8. Simplify the surd $\dfrac{\sqrt{3}+2\sqrt{2}}{\sqrt{3}-\sqrt{2}}\times\sqrt{7+2\sqrt{6}}$.

9. Define and find the general term and sum of a geometric series. Sum $\frac{1}{3}-\frac{1}{6}+\frac{1}{12}$, etc., to n terms and to ∞.

10. If s_n be the sum of n terms of an arithmetic series, prove that

$$s_{n(n+1)}-s_{n(n-1)}=\frac{1}{n}\cdot s_{2n^2}.$$

11. Express sec A in terms of sin A. Find sec 1290°.
Solve $3\tan(x-y)=\tan(x+y)=\sqrt{3}$.

12. Prove that

$$\operatorname{cosec}(\alpha+60^\circ)+\operatorname{cosec}(\alpha-60^\circ)-\operatorname{cosec}\alpha=3\operatorname{cosec}3\alpha.$$
$$\operatorname{cosec}^2(\alpha+60^\circ)+\operatorname{cosec}^2(\alpha-60^\circ)+\operatorname{cosec}^2\alpha=9\operatorname{cosec}^2 3\alpha.$$

13. In any triangle $a=b\cos C+c\cos B$. Prove this.
If the lines which bisect the angles AB of a parallelogram ABCD meet in E, those bisecting C, D in F, those bisecting A, D in G; find FG in terms of the sides and angle of the parallelogram.

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Scholarship Examinations.

SECOND YEAR.

MATHEMATICS.

Examiner, Professor NIVEN.

1. Any line parallel to the base of a triangle cuts the two sides in the same ratio.

The lines through the angles of a triangle and the middle points of the sides are trisected at the point of intersection.

2. A chord AB divides a circle into two segments, ACB, ADB; ADB is doubled over and takes position AC′B; if lines be drawn perpendicular to AB, show that the part intercepted between ACB, AC′B is always the same.

3. Define "Multiplication of fractions," and prove the commutative law in such cases.

If $x = Bc - Cb$, $y = Ca - Ac$, $z = Ab - Ba$, find $xy + ab(A^2 + B^2 + C^2) + AB(a^2 + b^2 + c^2)$ and $x^2 + a^2(A^2 + B^2 + C^2) + A^2(a^2 + b^2 + c^2)$; and show that if $Aa + Bb + Cc = 0$, the former of these quantities $= 0$ and the latter $= (A^2 + B^2 + C^2)(a^2 + b^2 + c^2)$.

4. The sum of 4 numbers in arithmetical progression is 16, and the sum of the products of the 1st and 3rd, and of the 2nd and 4th is 26. Find the numbers.

Solve the equations

$$xy^2 + y = 21, \qquad xy^4 + y^2 = 333.$$

5. If $x = \dfrac{3n-2}{3n-5}$, show that $1 + 4x + 7x^2 + \ldots$ to n terms $= (n-1)(3n-5) + 3(1 + x + x^2 + \ldots$ to n terms$)$.

6. Find the interest on a sum of money for n years at compound interest (payable quarterly). Apply the result to solve the corresponding problem of the present value of a perpetual annuity.

7. Find sin 3A in terms of sin A.

Show that

$$\operatorname{cosec}(\alpha - 60^\circ) + \operatorname{cosec}(\alpha + 60^\circ) - \operatorname{cosec}\alpha = 3\operatorname{cosec}3\alpha.$$
$$\operatorname{cosec}^2(\alpha - 60^\circ) + \operatorname{cosec}^2(\alpha + 60^\circ) + \operatorname{cosec}^2\alpha = 9\operatorname{cosec}^2 3\alpha.$$

8. Express the area of a triangle in terms of the sides.

Find expressions for the lines which join the feet of the perpendiculars from the angles of a triangle upon the sides.

9. Show how limits may be found, enclosing all the positive roots of an equation.

The equation $x^4 - 2x^3 - 2x + 7 = 0$ has a surd root whose real part is 2; solve the equation.

10. Obtain the equation of a straight line in terms of the intercepts on the axes.

Interpret the equations

$$(1)\ x + 3y + 1 = 0, \qquad (2)\ r = \cos\theta + \sin\theta.$$

11. Triangles of given area stand on a given base; find the locus of the point of intersection of the perpendiculars from the angles on the sides.

12. Find the equation of the chord of contact of tangents to an ellipse from any point.

If this chord pass through a focus, the point itself lies on a directrix.

13. If a right line stand at right angles to two other right lines, it must be perpendicular to every fourth line passing through the intersection of the two latter and lying in their plane.

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Scholarship Examinations.

Candidates for the Scholarships in Engineering substituted the following for Nos. 10, 11, 12, above:—

(10.) Define a *spherical triangle*, and prove that any two sides of a spherical triangle are together greater than the third.

(11.) Given the three angles of a spherical triangle, show how to solve it.

(12.) If the arcs AD, BE, CF, from the angles of a spherical triangle perpendicular to the sides meet in O, then

$$\sin AO = \frac{2}{\sqrt{3}} \sin \frac{a}{2} \text{ and } \sin DO = \frac{1}{\sqrt{3}} \tan \frac{a}{2}.$$

SENIOR SCHOLARSHIPS.

I.—ANCIENT LANGUAGES, LITERATURE, AND HISTORY.

GREEK.

Examiner, Dr. RYALL.

Translate, with such critical and explanatory notes as you may think necessary:—

(A.) ÆSCHYLUS—*Septem c. Thebas*, vv. 818–854.

ὦ μεγάλε Ζεῦ, καὶ πολιοῦχοι
δαίμονες, οἳ δὴ Κάδμου πύργους
*τούσδε ῥύεσθε * * .*
πότερον χαίρω κἀπολολύξω
πόλεως ἀσινεῖ σωτῆρι τύχᾳ,
ἢ τοὺς μογεροὺς καὶ δυσδαίμονας
ἀτέκνους κλαύσω πολεμάρχους;
οἳ δῆτ' ὀρθῶς, κατ' ἐπωνυμίαν,
καὶ πολυνεικεῖς,
ὤλοντ' ἀσεβεῖ διανοίᾳ.
ὦ μέλαινα καὶ τελεία
γένεος Οἰδίπου τ' ἀρά,
κακόν με καρδίαν τι περιπίτνει κρύος.
ἔτευξα τύμβῳ μέλος
Θυιάς, αἱματοσταγεῖς
νεκροὺς κλύουσα δυσμόρως
θανόντας· ἦ δύσορνις ἅδε ξυναυλία δορός.
ἐξέπραξεν, οὐδ' ἀπεῖπεν
πατρόθεν εὐκταία φάτις·
βουλαὶ δ' ἄπιστοι Λαΐου διήρκεσαν·
μέριμνα δ' ἀμφὶ πτόλιν·
θέσφατ' οὐκ ἀμβλύνεται.
ἰὼ πολύστονοι τόδ' εἰρ-
γάσασθ' ἄπιστον· ἦλθε δ' αἰακτὰ πήματ' οὐ λόγῳ.
τάδ' αὐτόδηλα, προῦπτος ἀγγέλου λόγος·
διπλαῖ μέριμναι, διδυμάνορα
κάκ' αὐτοφόνα, δίμοιρα τέλεια τάδε πάθη.
τί φῶ; τί δ' ἄλλο γ' ἢ πόνοι
πόνων, δόμων ἐφέστιοι;

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ἀλλὰ γόων, ὦ φίλαι, κατ' οὖρον
ἐρέσσετ' ἀμφὶ κρατὶ πόμπιμον χεροῖν
πίτυλον, ὃς αἰὲν δι' 'Αχέροντ' ἀμείβεται
τὰν ναύστολον μελάγκροκον θεωρίδα,
τὰν ἀστιβῆ 'πόλλωνι, τὰν ἀνάλιον,
πάνδοκον εἰς ἀφανῆ τε χέρσον.

(B.) Sophocles—*Trachiniæ*, vv. 633–662.

ὦ ναύλοχα καὶ πετραῖα
θερμὰ λουτρὰ καὶ πάγους
Οἴτας παραναιετάοντες, οἵ τε μέσσαν
Μηλίδα πὰρ λίμναν
χρυσαλακάτου τ' ἀκτὰν κόρας,
ἔνθ' Ἑλλάνων ἀγοραὶ
Πυλάτιδες κλέονται,
ὁ καλλιβόας τάχ' ὑμῖν
αὐλὸς οὐκ ἀναρσίαν
ἀχῶν καναχὰν ἐπάνεισιν, ἀλλὰ θείας
ἀντίλυρον μούσας.
ὁ γὰρ Διὸς 'Αλκμήνας κόρος
σεῦται πάσας ἀρετᾶς
λάφυρ' ἔχων ἐπ' οἴκους·
ὃν ἀπόπτολιν εἴχομεν,
παντᾶ δυοκαιδεκάμηνον ἀμμένουσαι
χρόνον πελάγιον ἴδριες οὐδέν· ἁ δέ οἱ φίλα δάμαρ
τάλαιναν δυστάλαινα καρδίαν
πάγκλαυτος αἰὲν ὤλλυτο·
νῦν δ' Ἄρης αὖ στρωθεὶς ἐξέλυσ'
ἐπίπονον ἁμέραν.
ἀφίκοιτ' ἀφίκοιτο· μὴ
σταίη πολύκωπον ὄχημα ναὸς αὐτῷ,
πρὶν τάνδε πρὸς πόλιν ἀνύσειε, νασιῶτιν ἑστίαν
ἀμείψας, ἔνθα κλῄζεται θυτήρ·
ὅθεν μόλοι πανίμερος,
τᾶς πειθοῦς παγχρίστῳ συγκραθεὶς
ἐπὶ προφάσει θηρός.

(C.) Homer—*Iliad*, xxiv., 448–459.

ἀλλ' ὅτε δὴ κλισίην Πηληϊάδεω ἀφίκοντο
ὑψηλήν, τὴν Μυρμιδόνες ποίησαν ἄνακτι,
δοῦρ' ἐλάτης κέρσαντες· ἀτὰρ καθύπερθεν ἔρεψαν
λαχνήεντ' ὄροφον λειμωνόθεν ἀμήσαντες·
ἀμφὶ δέ οἱ μεγάλην αὐλὴν ποίησαν ἄνακτι
σταυροῖσιν πυκινοῖσι· θύρην δ' ἔχε μοῦνος ἐπιβλὴς
εἰλάτινος, τὸν τρεῖς μὲν ἐπιρρήσσεσκον 'Αχαιοί,
τρεῖς δ' ἀναοίγεσκον μεγάλην κληῖδα θυράων,
τῶν ἄλλων· 'Αχιλεὺς δ' ἄρ' ἐπιρρήσσεσκε καὶ οἶος·
δή ῥα τόθ' Ἑρμείας ἐριούνιος ᾦξε γέροντι,
ἐς δ' ἄγαγε κλυτὰ δῶρα ποδώκεϊ Πηλείωνι,
ἐξ ἵππων δ' ἀπέβαινεν ἐπὶ χθονί, φώνησέν τε.

(D.) Homer—*Odyssey*, v., 368–379.

ὡς δ' ἄνεμος ζαὴς ἠΐων θημῶνα τινάξῃ
καρφαλέων, τὰ μὲν ἄρ τε διεσκέδασ' ἄλλυδις ἄλλῃ,
ὣς τῆς δούρατα μακρὰ διεσκέδασ'. αὐτὰρ 'Οδυσσεὺς
ἀμφ' ἑνὶ δούρατι βαῖνε, κέληθ' ὡς ἵππον ἐλαύνων·

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εἵματα δ' ἐξαπέδυνε, τά οἱ πόρε δῖα Καλυψώ.
αὐτίκα δὲ κρήδεμνον ὑπὸ στέρνοιο τάνυσσεν·
αὐτὸς δὲ πρηνὴς ἁλὶ κάππεσε, χεῖρε πετάσσας,
νηχέμεναι μεμαώς· ἴδε δὲ κρείων Ἐνοσίχθων,
κινήσας δὲ κάρη, προτὶ ὃν μυθήσατο θυμόν·
"οὕτω νῦν κακὰ πολλὰ παθὼν ἀλόω κατὰ πόντον,
ἰσόκεν ἀνθρώποισι διοτρεφέεσσι μιγείης·
ἀλλ' οὐδ' ὧς σε ἔολπα ὀνόσσεσθαι κακότητος."

Translate into Greek :—

It is easy to conceive how, under any less beneficent disposition of the masses of hill, the continents of the earth might either have been covered with enormous lakes, as parts of North America actually are covered, or have become wildernesses of pestiferous marsh, upon which the water would have dried as it fell, leaving them for great part of the year desert. Such districts do exist, and exist in vastness : the whole earth is not prepared for the habitation of man; only certain small portions are prepared for him—the houses, as it were, of the human race, from which they are to look abroad upon the rest of the world, not to wonder or complain that it is not all house, but to be grateful for the kindness of the admirable building in the house itself as compared with the rest. It would be as absurd to think it an evil that all the world is not fit for us to inhabit, as to think it an evil that the globe is no larger than it is. As much as we shall ever need is evidently assigned to us for our dwelling-place : the rest, covered with rolling waves or drifting sands, fretted with ice or crested with fire, is set before us for contemplation in uninhabitable magnificence; and that part which we are enabled to inhabit owes its fitness for human life chiefly to its mountain ranges, which, throwing the superfluous rain off as it falls, collect it in streams and lakes, and guide it into given places and in given directions; so that men can build their cities in the midst of fields which they know will be always fertile, and establish the lines of their commerce upon streams that will never fail.

LATIN.

Examiner, Professor LEWIS.

Subject for a Latin essay :—"Eloquium Demosthenis ac Ciceronis."

Translate into Latin verse :—

Woods, that wave o'er Delphi's steep,
Isles that crown th' Ægean deep,
Fields, that cool Ilissus laves,
Or where Mæander's amber waves
In lingering labyrinths creep,
How do your tuneful echoes languish
Mute, but to the voice of anguish !
Where each old poetic mountain
   Inspiration breath'd around :
Every shade and hallow'd fountain
   Murmur'd deep a solemn sound :
Till the sad Nine, in Greece's evil hour,
Left their Parnassus, for the Latian plains.

II.—MODERN LANGUAGES, LITERATURE, AND HISTORY.

THE ENGLISH LANGUAGE AND ENGLISH LITERATURE.

Examiner, Professor ARMSTRONG.

1. Make a metrical analysis of the following passage; comment upon its grammatical peculiarities; and paraphrase it neatly in modern English prose:—

> "The busy larke, messager of daye,
> Salueth in hire song the morwe graye;
> And fyry Phebus ryseth up so brighte,
> That al the orient laugheth of the lighte,
> And with his stremes dryeth in the greves
> The silver dropes, hongyng on the leeves."

2. Point out, and endeavour to quote, any remarkable passage or passages in the *Knight's Tale* which exhibit the dramatic element in Chaucer's genius.

3. Narrate the story, and explain the allegory of the last two cantos of Booke I. of the *Faëry Queene.*

4. Give an outline of the processes of thought by which *Macbeth* reasons himself into crime; quoting, as far as possible, his most remarkable soliloquies.

5. Give the substance of Milton's apology for *Samson Agonistes.*

Explain the relations of the poem both to the Greek and to the Romantic drama.

6. Sketch the plot of *Samson Agonistes,* and quote some of the speeches of Samson which seem to reveal the salient points of his character.

7. Explain the Satire of *Absalom and Achitophel.*

Quote the lines in which Dryden characterizes Buckingham and Ormond.

8. Compare Pope and Dryden as satirists.

What was the occasion of Pope's Satires and Epistles?

9. Point out the weak and the strong elements of Wordsworth's genius and style which appear in the "*Poems founded on the Affections.*"

10. Epitomize the tales of *The Brothers* and *Michael;* and examine the style of these poems with reference to Wordsworth's theory of poetic diction.

MODERN HISTORY.

Examiner, Professor ARMSTRONG.

1. In what European countries has the feudal system prevailed?

2. What were the principles of a feudal relation?

3. Describe the different species of fiefs.

4. What were the decrees of the Council of Clermont; what was their occasion, and what was their date?

5. Describe the condition of Europe at the opening of the first, and at the close of the last Crusade.

6. Why was the Crusade movement confined at first chiefly to the Franks and continental Normans?

7. Particularize the principal events in the Second and Fifth Crusades.

8. What appear to have been the direct and indirect effects of the Crusades upon the feudal system?

9. State the terms of the Peace of Westphalia.

10. Define the three principal periods in the reign of Louis XIV., particularizing the leading events by which they are characterized.

MODERN LANGUAGES.

Examiner, Professor DE VERICOUR.

(See Scholarships of Second Year, p. 98, for this Paper.)

Appendix D.

Scholarship Examinations.

III.—MENTAL AND SOCIAL SCIENCE.

LOGIC.

Examiner, Professor READ.

1. Explain and discuss the different methods of arriving at a classification of heads of predicables adopted by Aristotle, Aldrich, and Fowler.
2. How do the categories of Kant differ from those of Aristotle?
3. On what grounds has it been maintained that every syllogism contains a *petitio principii?* Are they tenable?
4. Mention some of the inadequate definition of cause in its scientific sense. What is the true definition, and why is it to be preferred?

METAPHYSICS.

Examiner, Professor READ.

1. What writer do you consider to be the founder of the sensational school of philosophy in Britain and why?
2. How do you explain the perception of visible distance? Have any objections been brought against the received theory?
3. Discuss the question whether the mind is always consciously active?
4. Explain some of the laws of association of ideas. Which philosophical school attaches the most importance to them and why?
5. What is meant by a "minimum visibile"? What mental phenomena has it been used to explain?
6. Explain the answer given to Hume by Reid and by Kant respectively.
7. Are so many preceding writers open to the charge brought against them by Sir W. Hamilton, that whilst admitting the testimony of consciousness as a fact they rejected its authority?
8. What does Mill mean by his "psychological method"? Is it adequate to explain the "ego" as a phenomenon?

POLITICAL ECONOMY.

Examiner, Professor MILLS.

1. Explain how Mill supports his proposition that "A demand for commodities is not a demand for labour"; test his reasoning by applying it to the case of the Lancashire workmen and manufacturers if consumers suddenly gave up the use of cotton clothing, and say whether you consider Mill's views need any and what modification.
2. Explain how it arises that the imports of England are constantly in excess of her exports.
3. Explain the conditions under which the revenue would probably be benefited by a reduction of duty, and those under which it must sustain a loss.
4. Explain how the working classes are affected by the regulations of trades unions which prohibit, 1st, piecework; 2nd, the taking more than a limited number of apprentices; 3rd, the introduction of improved machinery; 4th, the paying of one workman more than another.
5. State the several provisions of the Bank Charter Act, explaining the reasons which led to the adoption of each.
6. Explain the nature of the exchanges, and of the causes which lead to their fluctuations.

Appendix D,
Scholarship Examinations.

7. Explain the nature of commercial revulsions, stating the causes which lead to them, and how (if in any way) their effects may be mitigated.

8. Discuss the expediency of prohibiting the export of rice from India, when the late famine in Bengal was impending.

9. Discuss the question of the purchase of railways by the State.

V.—NATURAL PHILOSOPHY.

Examiner, Professor ENGLAND.

1. A weight W rests on a rough plane, supported by a string, which passing over a smooth pulley at the highest point of the plane, sustains a weight hanging vertically; prove that the angle between the two positions of the plane in which W is in a state bordering on motion is $2 \tan^{-1} \mu$.

2. Find the law of density in a heavy chain in order that it should hang in a cycloid.

3. Prove that if a point describes any orbit round a centre of force $r^2 \frac{d\theta}{dt} = h$.

4. A parabola is placed with its axis horizontal, prove that the straight line of quickest descent from the curve to the forces $= \sqrt{\frac{4l}{g}}$, l being the latus rectum.

5. Explain the phenomenon of the rainbow.

6. Find when an inferior planet is brightest.

7. What is Prevost's theory of exchanges?

8. How is the dispersive power of a transparent substance ascertained?

VII.—NATURAL SCIENCE.

PHYSICAL GEOGRAPHY AND GEOLOGY.

Examiner, Professor HARKNESS.

1. Describe the two forms of glaciers.

2. What are the several products evolved by volcanoes?

3. Describe the several currents of the Pacific.

4. In what respect does jointing differ from cleavage?

5. Name and describe the several rocks which belong to the doleritic group.

6. Where in the British Isles do the Cambrian rocks occur; and under what circumstances are they seen?

7. Where in Britain do the earliest traces of land vegetation occur, and what is the nature of this?

8. What forms of fishes are most characteristic of the carboniferous formation?

9. What portion of the triassic formation is represented in Ireland; and where does it occur?

10. What is the nature and position of the strata known as wealden? How have the wealden strata been grouped by Lyell?

11. What is the nature, the geographical range, and the position of the nummulitic limestone?

12. Name some of the characteristic fossil plants of the miocenes; and state where they occur?

Appendix D.

Scholarship Examinations.

BOTANY.

Examiner, Professor REAY GREEN.

1. Define the sub-orders and tribes of Rosaceæ represented in the British flora.

2. What characters are of most worth in arranging the orders of Disciforæ?

3. Describe the structure of the gynœcium in the common water plantain, and compare it with that of allied monocotyledons.

4. Describe the structure of the stem in Chara.

5. Describe carefully the sexual organs and early development of Fucus.

ZOOLOGY.

Examiner, Professor REAY GREEN.

1. Name the principal cranial nerves, from before backwards, indicating those bones of the skull whose homologies they serve to determine.

2. Describe the external form of a cuttle-fish, showing the true position of the so-called arms or feet, gills, and funnel.

3. Describe the labium of an orthopterous insect, and contrast it with the labium in other orders of hexapods.

4. Describe the skeleton of the common star-fish, and point out the relative position of the water-vessels.

5. Compare the structure of Acineta with that of one of the ciliate Infusoria.

Faculty of Law.

SESSIONAL EXAMINATIONS.

FIRST YEAR'S ENGLISH LAW.—REAL PROPERTY.

Examiner, Professor O'SHAUGHNESSY.

1. What are the rights of tenant for life with respect to cutting wood? Distinguish voluntary from permissive waste.

2. How is an entail now barred?

3. How long does the possibility of issue continue in the eye of the law?

4. What is a tenant in fee-simple? How does his estate descend? What is his estate called?

5. Explain the meaning of the word *assetts?*

6. What is the object of the writ of *elegit?*

7. What incidents of socage tenure were done away with by the Statute 12 Car. II., cap. 24.

8. What was a feoffment with livery of seisin? Of how many kinds was it?

9. What is an *escrow?* From what time does it operate?

10. If a trustee should refuse to convey when required the lands of which he is trustee, what remedy has the person beneficially interested?

SCHOLARSHIP EXAMINATIONS.—THIRD YEAR.

Examiner, Professor O'SHAUGHNESSY.

SMITH'S LEADING CASES.

1. Declaration stated that the plaintiff was a dealer in the funds, and that the defendant said of him, "He is a lame duck"; inuendo, that he

was incapable of fulfilling his contracts, in consequence of which divers persons refused to deal with him. Was the declaration held good or otherwise? State the reason of the particular decision. Give the principle on which the decision was founded, and name the leading case deciding the principle.

2. Why would an heir be estopped by a verdict against his ancestor through whom he claims? In such cases upon what circumstances does the effect of verdicts depend?

3. If goods are sold without any express stipulation as to price, what will be the presumption as to their value, if (*a*) the vendor refuse to give any express evidence thereof? And if (*b*) the vendor be shown to have suppressed the means of ascertaining the truth?

State the maxim which the case illustrates; and mention the leading case deciding the principle.

4. How far does the principle, that every man's house is his castle, extend? Draw the distinction as to execution of process in civil suits, and in cases of felony or breach of the peace.

5. What exception is there to the general rule of law, that no man can acquire a title to a chattel personal from anyone who has himself no title to it, except in market overt? Mention the case in which the exception was established.

EQUITY JURISPRUDENCE (STORY).

1. Against what persons will trusts, properly cognizable in equity, be enforced?

2. Explain the principles on which equity will act, with respect to agreements between parties, not to bid against each other at a public auction.

3. Where two firms have been dealing with each other, and some or all of the partners in one firm are partners with other persons in the other firm, what is the difficulty of maintaining an action at law in regard to any transactions or debts between the two firms? And how can any such disputes be adjusted in equity?

4. What circumstances will equity take hold of in order to rebut the presumption that a testator, by not disposing of the residue of his estate intended a gift of it to his executor?

5. What power as to the disposition of her property does an ante-nuptial agreement for securing a wife's separate property to her own use give to her in equity?

SENIOR SCHOLARSHIP.

Examiner, Professor O'SHAUGHNESSY.

LAW OF VENDORS AND PURCHASERS (LORD ST. LEONARDS).

1. Where an estate is sold by auction in lots, and the vendor has not a title to all the lots sold, what will equity do with respect to other lots purchased by same purchaser, to which a title can be made?

2. By what condition in a contract for sale may sellers guard against misdescriptions and errors? How far does the condition, common in such cases, usually extend?

3. How far should covenants for title extend? How has the Court of Chancery acted with respect to the covenants for title to be given by a person not claiming by purchase?

Appendix D.

Scholarship Examinations.

LAW OF LANDLORD AND TENANT (FURLONG).

4. If executors dispose of leaseholds for years vested in them in their representative capacity, notwithstanding that the leaseholds had been specifically bequeathed, are there any grounds on which such a sale could be impeached? State the reason for the answer.

5. If personal property be comprised in a demise of a house or land, out of what does the rent issue? State the rule as to rent involved in the answer.

6. What is necessary in order to support the action for use and occupation?

THE LAW OF EVIDENCE (TAYLOR).

7. What is the rule governing the production of evidence as to the party on whom the burden of proof lies? Why has the rule been adopted in practice? What are the best tests for ascertaining on whom the burden of proof lies?

8. When is it permitted to explain the language of a written instrument by extrinsic evidence?

9. What are the grounds upon which the rule as to a judgment *in rem* rests, that, as well against strangers as against parties, it furnishes, in general, conclusive proof of the facts adjudicated?

COMMON LAW PLEADING (STEPHEN).

10. If issue be well tendered what remains for the opposite party to do? If it be not well tendered what may the opposite party do? How does joinder in demurrer differ from joinder in issue?

11. Why is surplusage in pleading not the subject of demurrer? Give some instances of surplusage?

12. What is the leading distinction, as to the manner of showing title in pleading, between estates in fee-simple and particular estates?

CIVIL INJURIES—CRIMES (STEPHEN, COMS.)

13. To a proceeding to enforce an award, what is the nature of the objection which may be made to its validity? How and when must any other objections to its validity be taken?

14. In what does security to keep the peace consist? How may application be made for such security to the court of quarter sessions?

15. If a defendant be found guilty in his absence, of a misdemeanour, how is his attendance to receive judgment compelled? When he appears for what may he move in arrest of judgment?

Faculty of Medicine.

Sessional and Prize Examinations.

SESSIONAL AND PRIZE EXAMINATIONS.

NATURAL PHILOSOPHY.

Examiner, Professor ENGLAND.

1. How can the specific gravity of a small solid body be ascertained with a specific gravity bottle?

2. Describe an experiment by which water may be frozen by the cold of its own evaporation.

3. Define the amplitude and length of a wave. How many vibrations correspond to a note whose wave length in air is 4 feet?

Sessional and Prize Examinations.

4. The latent heat of steam may be expressed by the following formula, in centigrade degrees, viz., 607°— ·7t.; what is the latent heat, on Fahrenheit's scale, of steam whose temperature is 230° Fahrenheit?

5. Explain the circumstances under which light undergoes total reflexion.

6. What is meant by the dispersion of light? How does it affect the images formed by lenses?

7. If a Leyden jar be charged and then insulated sparks may be taken alternately from each of the coatings; give the explanation of this.

8. Describe the usual method of producing electricity—1st, by friction; 2nd, by chemical actions; 3rd, by heat; 4th, by magnetism.

9. What is the cause of the intense cold produced by a mixture of carbonic acid and ether.

10. Explain what is meant by the parallelogram of forces.

ANATOMY AND PHYSIOLOGY.

Examiner, Professor CORBETT.

1. Describe the gall bladder, cystic duct, and common bile duct.
2. Describe the sounds which accompany the heart's action.
3. Describe the office, structure, and relations of the œsophagus.
4. Describe the structural anatomy of the veins.
5. Describe the structure of the lymphatic vessels and glands.
6. Make a classification of the joints, and give an example of each form of articulation.
7. Describe the nature of the chyle, and the process of chylification.
8. Describe white and yellow fibrous tissues.
9. Describe the intestinal villi.
10. Describe the pons Varolii and the crura cerebri.
11. Give an outline of the functions performed by the liver.

PRACTICAL ANATOMY.

Examiner, Professor CORBETT.

1. Describe the capsular ligament of the shoulder joint, and the relations of muscles to it.

2. Describe the origin, insertion, and relations of the obturator externus muscle.

3. Describe the ischio-rectal fossa, and the connexions of the levator ani muscle.

4. Describe the origin and course of the internal pudic artery; mention the parts supplied by its branches.

5. Describe the origin, insertion, and relations of the omo-hyoid muscle.

6. Describe the suprascapular, subscapular, and circumflex nerves.

7. Describe the shaft and articular extremities of the clavicle; also state the attachments of muscles and ligaments.

8. Describe the origin, course, and relations of the right common carotid artery.

9. State the relations of the urinary bladder in the male subject; describe the true and false ligaments of this organ.

MATERIA MEDICA AND THERAPEUTICS.

Examiner, MATTHIAS O'KEEFFE, A.M. M.D.

1. Contrast the action of a stimulant with that of a narcotic. Name two substances which typify each class, and give two of the most important indications for their exhibition?

AppendixD.

Sessional and Prize Examinations.

2. Bromide of potassium; its physiological action. In what diseases has this drug been found most useful?

Write a prescription for an eight ounce mixture containing it.

3. Green iodide of mercury; how is it prepared? Therapeutic action; mode of administration. How would you detect the presence of any red iodide in it? Dose.

4. Chloroform; its composition; tests for its purity. What is its physiological action on entering the blood?

5. Drastic purgatives; what is their mode of action? Name the most important drugs in this division; select any one; give its source, pharmacopœial preparations, and mode of administration in the form of a prescription?

6. Digitalis; physiological action; indications and contra-indications for its exhibition; mode of administration?

7. Arsenious acid; pharmacopœial preparations containing it; dose of each; Therapeutic action?

How would you estimate the quantity of arsenious acid as As_2O_3 in an ounce of the solution of an arsenite by volumetric analysis?

8. Acidum hydrocyanicum dilutum B.P.; its preparation; physiological action; indications for its use; dose.

How would you detect the quantity of a cyanide in an ounce of its solution by volumetric analysis?

9. State the difference between a deodorizer, a disinfectant, and an antiseptic, with their several modes of action. Name the principal substances possessing these powers respectively, and their mode of use.

B.—ORAL EXAMINATION.

The student was asked to give the name, source, therapeutic action, and dose of each of ten preparations placed before him.

SURGERY.

Examiner, Professor TANNER.

1. Describe the five methods by which the healing of open incised wounds may be accomplished.

2. What is pus, its properties, varieties, and the different views of its origin?

3. Describe the three forms of syphilitic sores, their pathology and treatment.

4. Detail the several kinds of stricture of the male urethra, their locality, causes, symptoms, effects, and treatment.

5. Relate the symptoms and causes of retention of urine, the suitable treatment, and with what it may be confounded.

6. How, when, and where would you do the operation colotomy?

7. Describe Teale's amputation of the thigh, fully adopting the antiseptic system, and the after treatment.

8. What are the symptoms of an oblique strangulated inguinal hernia, its progress, treatment, and the operation of kelotomy?

9. What are the symptoms of stone in the male bladder, the cases suited for the operation of lithotrity, the operation, its dangers, the different methods of performing it, and of catching the stone?

10. Describe the different kinds of aneurism, how they may be caused, and how cured.

MIDWIFERY.

Examiner, Professor HARVEY.

1. Describe the female urethra, its structure and relations. Detail the steps you would take in the introduction of the catheter. What obstructions to its passage occur occasionally during labour, and how are they met?

2. In what respect does the gestation of marsupial animals differ from that of the higher mammalia?

3. What is understood by the term "impotence," and what by "sterility":—can a woman be impotent or a man sterile? If the latter, how could the condition be recognised?

4. Give an outline of the symptoms, causes, and treatment of abortion. What principal points are necessary to be ascertained with a view to the successful management of the case?

5. Describe the principal changes in the breast, as a result of pregnancy. When do they begin to show themselves, and when are they at their height? Are these signs equally valuable in first and in subsequent pregnancies?

6. The child's head is entering the pelvis in the second position—give its diagnosis, its ordinary course, and its variations. Is there any means of confirming or correcting the information obtained from the digital examination?

7. Describe the action of ergot on the parturient uterus; its uses, and its dangers.

8. In a labour which has proceeded naturally up to this time the head is arrested in the cavity of the pelvis, and it is deemed necessary to apply the forceps:—detail minutely all the steps of your operation until the delivery is completed.

9. In a case of placenta prævia where the placenta is attached partially over the os uteri, with considerable hæmorrhage, good pains, but the os but little dilated, what would be your immediate line of treatment; and what ulterior management may be required?

10. A primipara is near her confinement; she has headache and noises in her ears, is languid and very irritable; there is some œdema of the face, and her bowels are confined. What is her ailment, and how would you treat it?

PRACTICE OF MEDICINE.

Examiner, Professor O'CONNOR.

1. How do you explain the increased heat in fever?

2. From what class of fevers are idiopathic distinguished?

3. Enumerate the various forms of idiopathic fever, with diagnostic symptoms.

4. Given a fever before the eruption in an exanthema, what symptoms would lead you to expect one form rather than another?

5. What difference might you expect in the pathological changes taking place in scarlatina, measles, and variola?

6. What are the causes which give rise to ramoilisement of the brain?

7. Why does one attack of apoplexy render a second more probable?

8. Speaking generally, what are the causes of neuralgia, and what nerves are most likely to be affected?

9. What are the physical signs of pericarditis through all its stages?

10. How do you distinguish between a lung solidified by pneumonia and pleuritic effusion in the acute and chronic form?

11. Contrast Niemeyer's and Laenec's views on pulmonary consumption.

Appendix D.

Sessional and Prize Examinations.

12. State the various causes of hæmoptoe, and of hæmatemesis.

13. Why is hepatic disease more prevalent in tropical than in temperate regions? What form is most common in this country?

14. What are the terminations of chronic ulcer in the stomach?

15. Describe the tests for diagnosis in Bright's disease and diabetes.

16. How are gout and rheumatism distinguished?

17. What is the height of the thermometer in fever, what height shows extreme danger?

18. Enumerate some divisions of epilepsy, distinguishing between it and hysteria.

MEDICAL JURISPRUDENCE.

A. MEDICAL PART.

Examiner, MATTHIAS O'KEEFFE, A.M., M.D.

1. Three pieces of cotton cloth are placed before you marked A, B, C. They are all stained, one with solution of sulphocyanate of iron, another with cochineal, and the third with blood. Distinguish, by the chemical reagents before you, one from the other, and verify the result by Sorby and Browning's Micro-spectroscope.

Are there any means of distinguishing menstrual from ordinary blood stains? If so, give them.

2. Specify some cases in which you have seen the method of dialysis employed in separating a poison from the contents of the stomach, or from the tissues of the animal poisoned, and give the tests used (in the particular case you mention) for the identification of the poison in the dialysed fluid.

3. A body has lain exposed to the air, in the month of October, in Cork, for a space of seventeen days; what external appearances will it present, and state nature and extent of the internal putrescence.

4. The body of a man, drowned in Cork harbour on the 10th of September, has been entangled in piles at a depth of ten to twenty feet, and is recovered on 12th of January following; what appearances will it probably present—1st. On being taken out of the water; 2nd. After lying in the air for forty hours?

How does putrescence in the drowned differ from that in other dead bodies?

5. What were the appearances in the stomach, liver, and kidneys of the dog you saw poisoned by phosphorus?

We proved the presence of phosphorus in the contents of the urinary bladder. Give the two modes of testing employed on that occasion, and the manner in which they were carried out.

6. You are called to see a man found lying in the street insensible and wholly unconscious; what may have produced his condition. Give the circumstances that would guide you in your diagnosis.

What post mortem appearances were presented in the body of the rabbit you saw poisoned by opium?

7. A certain microscopical preparation was presented to you, under a magnifying power of six hundred diameters, at the lecture on rape. Give a short description of it, and say to what extent, such, if found, would be available in the evidence of the medical expert.

8. One of three vessels marked X, Y, Z contains a solution of a corrosive, a second that of an irritant, and a third that of a neurotic poison. Discover, by aid of the reagents on the table, what is the poison in each vessel respectively, and give shortly the symptoms that would be produced by a poisonous dose of each, stating what you consider the smallest quantity of each that would destroy life in a healthy adult male.

Appendix D.

Sessional and Prize Examinations.

B. LEGAL PART.

Examiner, Professor O'SHAUGHNESSY.

1. With respect to a medical man's obeying the subpœna of a Court, what is the distinction betwen the case of a man who sees a fact and is called to prove it in a court of law, and that of a man who is selected by a party to give his opinion on a matter on which he is peculiarly conversant from the nature of his employment in life?

2. What, in reference to civil jurisprudence, may the term "birth" be regarded as signifying?

In relation to criminal jurisprudence, when can a child be considered to be legally born?

Under what circumstances is an infant *en ventre sa mère* to be considered to be actually born?

What is the true date of a birth?

3. Upon what does the competency of a child as a witness depend?

What is the law as to the criminal responsibility of children?

4. When are medical men justified in ordering restraint in the case of an alleged lunatic? What is the legal rule for the interference with the liberty of a person which restraint always implies?

5. What circumstances should be taken into consideration in regard to testamentary capacity? What is the test of such capacity?

SCHOLARSHIP EXAMINATIONS—FIRST YEAR.

Scholarship Examinations.

(See Papers for Literary and Science Scholarship Examinations in the Faculty of Arts, pp. 89, 99.)

SECOND YEAR.

NATURAL PHILOSOPHY.

Examiner, Professor ENGLAND.

1. How is it shown that when a body is charged with electricity the electricity is confined to the surface?

2. In Smee's battery what is the peculiar advantage of using platinized silver?

3. How does the intensity of a current depend on the length and section of the conductor through which it passes?

4. A mercurial barometer is furnished with a brass scale; what corrections should be applied to the observed reading for a given change of temperature?

5. How is the latent heat of steam observed?

6. Describe the construction of a spectroscope with one prism.

7. How is polarized distinguished from ordinary light.

8. Why does a change of temperature alter the velocity of sound in air?

9. Explain why the rate of an ordinary clock is altered by change of temperature?

10. State the conditions under which three forces can equilibrate each other.

11. A body is projected vertically upward with a velocity of 640 feet per second; to what height will it ascend?

12. 8 ozs. of a body whose specific gravity is 9·6 are mixed with 15 ozs. of another whose specific gravity is 4·3; what is the specific gravity of the mixture?

CHEMISTRY.

Examiner, Professor SIMPSON.

1. What gas is evolved when chlorine is passed into a solution of ammonia? Could you prepare this gas in another way? State how it may be made to combine with carbon.

2. What is meant by the term quantivalence as applied to an element? Is the quantivalence of the same element invariable? Give examples. Is the quantivalence of the same compound radical invariable? Illustrate by examples.

3. How is iodide of potassium prepared? How may chlorine and iodic acid be detected, if present?

4. How may acid carbonate of potash be distinguished by a chemical test from the neutral carbonate?

5. Describe and explain how carbonate of soda may be formed from common salt.

6. How is chloride of lime prepared? What is its constitution and what is the action of dilute sulphuric acid upon it? Give equations.

7. Explain what is meant by chemical affinity. State the order of affinity for hydrogen of the following elements:—bromine, iodine, chlorine, sulphur. How may the order be ascertained by experiments?

8. How may the two chlorides of mercury be prepared? State the action of potash and ammonia upon them. Give equations.

9. Describe and explain how you would prepare pure nitrate of silver from old plate or silver coin.

10. How may nitrogen be detected in an organic compound by means of sodium? Explain how you would determine its amount by the process of Will and Varrentrapp.

11. Write the graphic formulæ of chloral and aldehyde; and explain by equations the action of potash upon the former.

12. If ethyl alcohol boils at 78° Cent., at what temperature ought normal propyl alcohol to boil according to Kopp's law?

13. Give two general methods for the preparation of the alcoholic cyanides or nitriles. Explain the reactions by equations.

14. What compound is formed when ethyl isocyanate is subjected to the action of caustic potash? Could the same body be prepared in another way? Explain the reactions by equations.

BOTANY.

Examiner, Professor REAY GREENE.

1. In what British Thalamifloræ is the placentation free-central?
2. Indicate the principal kinds of fruit furnished by the order Rosaceæ.
3. Define the order Solaneæ. Name its British genera.
4. Give some account of the sexual organs in Mosses.
5. Describe the structure of the common puff-ball.

ZOOLOGY.

Examiner, Professor REAY GREENE.

1. What orders of mammals are represented in the Irish fauna?

2. Compare the skull of the crocodile with that of any other reptile.

3. Give, in strict zoological language, a concise definition of the family Salmonidæ, sufficient to distinguish it from commonly known and allied families of fishes.

4. Contrast the mouth-parts of a cockroach with those of a butterfly.

5. Describe the position and structure of the respiratory apparatus of the snail.

ANATOMY AND PHYSIOLOGY.

Examiner, Professor CORBETT.

1. Describe the course of the blood through the vascular system.
2. Describe the portal venous system.
3. Describe the gall bladder, cystic duct, and common bile duct.
4. Describe a lobule of the liver and the microscopic features of the hepatic cells.
5. Describe the microscopic characters of yellow fibrous tissue.
6. Describe the choroid coat of the eye.
7. State the relations, structure, and office of the pancreas.
8. Give a short account of the process of renal secretion.

THIRD YEAR.

ANATOMY AND PHYSIOLOGY.

Examiner, Professor CORBETT.

1. What are the structures composing the coats of veins, and how are they disposed? What are the parts of the venous system, which present special arrangements?
2. Describe the general construction of the chest and the respiratory movements; mention the muscles and nerves concerned in these functions.
3. How is the influence of the nervous system on gastric digestion manifested?
4. What are the changes effected on alimentary substances in the small intestines?
5. What is the structure of the intestinal villi?
6. Describe the origin, course, and distribution of the phrenic nerve.
7. Describe the third ventricle of the brain.

Oral examination.

PRACTICAL ANATOMY.

Examiner, Professor CORBETT.

1. Describe the position, relations, and structure of the thyroid body
2. Describe the thyroid arteries and veins.
3. Describe the superficial veins of the upper extremity.
4. Describe the sub-scapular, supra-scapular, and posterior scapular arteries.
5. Describe the arteria profunda femoris and its branches.

Oral examination.

Description of specimens.

MATERIA MEDICA.

Examiner, Professor PURCELL O'LEARY.

1. *Oxalate of Cerium*, its physical and chemical properties, physiological action and therapeutical applications, doses and modes of administration.
2. *Bromide of Ammonium*. Similar particulars.
3. *Gallic Acid*. Similar particulars.
4. *Opium*. Constituents; reactions of its different alkaloids; their physiological actions and therapeutical applications; comparison of the action of opium itself with that of morphia.
5. Describe the process by which chloroform is produced, and explain the reactions which take place during its production.

Appendix D. — Scholarship Examinations.

6. Give the different views set forth with regard to the process of etherification and the arguments on which these views are based.

7. Give the tests by which the alkaloids of cinchona bark are distinguished one from the other.

8. Tests of purity of nitric, sulphuric, and hydrochloric acids.

FOURTH YEAR.

ANATOMY AND PHYSIOLOGY.

Examiner, Professor CORBETT.

1. Describe Meckel's ganglion, mentioning its branches of communication and distribution.
2. Give an outline of the function of the liver.
3. Describe the microscopic features of the gastric follicles.
4. Describe the Eustachian tube and membrana tympani.
5. Describe the muscles of the larynx, and mention their actions.
6. How may it be demonstrated that the spinal nerves are of a compound character, and that the spinal cord exercises power independent of that derived from its connexion with the brain.
7. State the functions of the superior and inferior laryngeal nerves.

PRACTICAL ANATOMY.

Examiner, Professor CORBETT.

1. Describe the origins, insertions, and relations of the superior and inferior oblique muscles of the eye.
2. Describe the origin and course of the ophthalmic artery. Enumerate the branches of this vessel.
3. Describe the position, relations, and attachments of the tentorium cerebelli.
4. Describe the posterior tibial and the plantar arteries.
5. Describe the origin, relations, and distribution of the obturator nerve.
6. Describe Poupart's ligament, Gimbernat's ligament, and the crural ring.
7. Describe the origin, course, relations, and branches of the internal maxillary artery.

Oral examination.

Description of Specimens.

THERAPEUTICS.

Examiner, Professor PURCELL O'LEARY.

1. Describe the therapeutical applications of IRON, distinguishing those of its various preparations, and give the various views entertained as to the rationale of its action.
2. Give a general outline of the therapeutical applications of the class of TONICS, dividing them according to their active agents.
3. Contrast the action of QUININE with that of arsenic in intermittent disease.
4. How does hydrate of chloral act?
5. What are the methods by which we ascertain the therapeutical value of medicines? What the advantages and disadvantages of each?
6. How far, and in what manner can we influence the constitution of the blood by the action of remedial agents?

7. Give an outline of the class of remedial agents termed *evacuants*, with examples of each sub-division.

8. What relations as to therapeutical effects exist between opium and belladonna, belladonna and Calabar bean.

PATHOLOGY.

Examiner, Professor O'CONNOR.

1. State the causes of general anasarca. Explain the manner of their operation.
2. Specify and explain the causes of hypertrophy of the heart.
3. The causes of apertrophy.
4. What are the various causes of the predominance of cerebral disease in infancy and old age?
5. What are the causes and usual termination of empyema?
6. In what relation do disease of the lungs and liver stand to each other?
7. What is the condition of the urine in Bright's disease, with the several tests?
8. What pathological changes are found in a case of tabes mesenterica?
9. Give a comparative view of the pathological changes in a case of typhus and typhoid fever.

SURGERY.

Examiner, Professor TANNER.

1. Describe the local symptoms of inflammation, and to what they are due, and the pathology of inflammatory fever.
2. Give the treatment of concussion and of compression of the brain, and of fractures of the skull.
3. What are the different kinds of nasal polypi, their symptoms, seat, and treatment?
4. Describe the affections obstructing the respiration which call for the operation of tracheotomy, also the operation, and the instruments used.
5. What is a nævus, its course, and different kinds of treatment?
6. What are the several forms of abdominal hernia, and the treatment for each?
7. Describe the injuries and diseases of the veins, and their treatment.
8. Describe the operation of nephrotomy, and the cases in which it is required.
9. Describe in detail, the different amputations of the foot.
10. Describe the diseases of the prostate gland, their symptoms and treatment.
11. Describe the dislocations of the astragalus, their symptoms and treatment.

MIDWIFERY.

Examiner, Professor HARVEY.

1. In what respects does the process of gestation in marsupial animals differ from that of the higher mammalia?
2. Give a description of the normal condition of the muscular tissue of the unimpregnated uterus, the mode of its development during pregnancy, and of its involution after parturition.

Appendix D.

Scholarship Examinations.

3. Describe the varieties and modes of performing ballottement. What is the exact amount of its value as a diagnostic of pregnancy?

4. Enumerate the principal symptoms of the death of the fœtus in utero. When it occurs before the termination of pregnancy, what is the usual course of such a case?

5. Under what circumstances during labour is the exhibition of ergot desirable; and how may it be productive of injurious consequences?

6. Enumerate the principal indications for resorting to turning in contracted pelvis, as a substitute for craniotomy. Within what limits of conjugate diameter does the operation appear justifiable; and what are the contra-indications?

School of Engineering.

Sessional Examinations.

SESSIONAL EXAMINATIONS—FIRST YEAR.

Geometrical Drawing.

Examiner, Professor Jack.

1. Construct a fourth proportional to three given lines.

2. Give a construction for the curve of a scotia moulding.

3. If two lines be parallel and one of them be perpendicular to a plane, the other shall be also perpendicular to that plane.

4. Find the traces of a plane which shall pass through three points whose projections are given.

5. Find the traces of a plane which shall pass through a point whose projections are given, and be perpendicular to a line whose projections are given.

6. Given the projections of a sphere and the horizontal trace of a plane touching it, find the other trace and the projections of the point of contact.

7. Explain the method of finding the projections of the curves of intersection of a vertical circular cone and a vertical circular cylinder.

8. The foot of a bank makes 30 degrees with the ground line, and the bank rises at 1 to 3 to a height of 7 feet, and is then horizontal; a pole is set up 8 feet from the foot of the bank, and leans over parallel to the vertical plane at 1 in 7 from the vertical; find its shadow.

9. Prove that the perspectives of parallel lines pass through a single point.

10. Find the projection of the heading spiral of a skew-bridge on a plane parallel to the face of the bridge.

SECOND YEAR.

Surveying.

Examiner, Professor Jack.

1. Practical examination on Vernier.

2. Practical examination on level.

3. Explain the method of checking the accuracy of a closed traverse survey, and of plotting it.

4. How may the horizon glass of the box sextant be out of adjustment? What effect would this error produce on an observation? How may the want of adjustment be detected?

5. How may the horizontal axis of a transit theodolite be out of adjustment? How would you ascertain whether it be so?

6. Describe the circumstances in which the problem of the reduction of an angle to the centre may occur, and give and prove the formula.

7. Explain the method of keeping a level field book.

8. Why is it necessary to make an allowance in chaining over sloping ground? Describe the method of making this allowance.

9. A line has to be ranged from a point A to a point B, invisible from each other, but both visible from an intermediate station, describe the method you would adopt (*a*) when the station is of some extent in the line A B, (*b*) when it is very narrow.

10. A chain line meets a wide stream obliquely; describe some method of ascertaining the distance across it without using an angular instrument, the ground being flat.

THIRD YEAR.

ENGINEERING.

Examiner, Professor JACK.

Morning.

1. Describe Hoffman's ring kiln as used for burning bricks.

2. Describe ashlar masonry and rubble masonry.

3. What is the difference between Roman and Portland cement?

4. What methods have been adopted for laying concrete in a continuous or nearly continuous mass under water? Note the danger against which the chief precaution has to be taken.

5. Describe some of the methods adopted for the prevention of decay in timber.

6. Give an outline of the Bessemer system of making steel, and describe the nature and properties of the material obtained by this process.

7. What are bearing piles? With what different objects may they be used in a foundation? How are they driven into the ground?

8. How are large iron cylinders used in foundations?

9. What are the counterforts in a stone bridge? Explain the object with which they are designed.

10. What is the ordinary practice as to the thickness of the piers in a stone bridge of several arches? How should the masonry differ in a pier and an abutment of a bridge?

Afternoon.

1. Describe the elide valve, as used in modern practice in the locomotive, pointing out the objects which are sought for, as regards admission and escape of the steam.

2. What means have engineers of obtaining information as to whether the valve in reality produces the result intended?

3. What is the formula now used for calculating the flow of water over a thin edged weir? On what principles has it been established?

4. Describe some form of construction that has been adopted for the upper flange, and the diagonals exposed to forces of compression in lattice girders of large span. If you can, refer to an example.

5. Sketch the design for the lattice girders to carry a foot bridge over a single line of railway.

6. If a longitudinal force of tension was applied along the edge of a bar, how would you estimate the variation of the stress over the cross section?

Appendix D.

Sessional Examinations.

7. If the strength of the plate be taken as unity, what is the strength of a single rivetted and what of a double rivetted lap joint? Explain the reason of the difference.

8. How do the permanent and passing load combine with regard to the stresses produced by them in the diagonals of a Warren girder?

9. In a lattice girder, consisting of several systems of diagonals, how would you proceed to ascertain the stresses produced by a uniformly distributed load?

10. How is the bending of a beam connected with the value of the moment of the internal stresses round the axis of any section?

Scholarship Examinations.

SCHOLARSHIP EXAMINATION.—SECOND YEAR.

Geometrical Drawing.

Examiner, Professor Jack.

1. Give and prove a method for drawing a curve of five centres when the span and rise are given.

2. Give and prove the method of drawing a cycloid.

3. Find the projections of a line which shall pass through a point whose projections are given, be parallel to a plane whose traces are given, and meet a line whose projections are given.

4. Given the horizontal trace of a cone and projection of its vertex, find traces of a plane touching cone and passing through a point whose projections are given.

5. The side of a square is two inches long, and three of its angles are one-half inch, three-eighth inch, and five-eighth inch above the horizontal plane, construct its projection.

6. Find the projections of the curve of intersection of a horizontal ring and a vertical circular cylinder (no further limitation).

7. Find the shadow cast by the side of the abacus in the Tuscan order on the ovolo below it.

8. What are measuring points and lines in perspective? What use is made of them?

9. Describe the entablature of the Corinthian order.

10. Describe the window tracery of the decorated period.

THIRD YEAR.

Mathematics.

Examiner, Professor Niven.

1. If a chord A B of a circle be divided into two segments ACB, ADB, and the latter be doubled over AB, so as to come into the position AC′B, and if lines be drawn at right angles to AB to cut these segments AC′B, ACB; show that the lengths intercepted by them are always the same.

2. The sum of all plane angles which form a solid angle is less than four right angles.

3. The sum of 4 numbers in arithmetical progression is 16, and the sum of the products of the 1st and 3rd, and of the 2nd and 4th, is 26. Find the numbers.

Solve the equations $xy^2 + y = 21$, $x^2y^4 + y^2 = 333$.

4. Find the interest on a sum of money lying for n years at compound interest (payable quarterly).

Appendix D.

Scholarship Examinations.

5. Find an expression for all angles which have a given cosecant. Show that

$$\operatorname{cosec}(\alpha+60^\circ)+\operatorname{cosec}(\alpha-60^\circ)-\operatorname{cosec}\alpha=3\operatorname{cosec}3\alpha.$$
$$\operatorname{cosec}^2(\alpha+60^\circ)+\operatorname{cosec}^2(\alpha-60^\circ)+\operatorname{cosec}^2\alpha=9\operatorname{cosec}^2 3\alpha.$$

6. Solve a spherical triangle of which two angles and the included side are given.

How may this be done by referring it to right angled triangles?

7. Find the equation of a straight line which passes through the intersection of two straight lines, and is at right angles to a third.

8. Find the chord of contact of tangents to an ellipse from an external point.

The chords of contact of all points lying on a diameter are parallel to the tangents at the points where the diameter meets the curve.

9. Find the locus of the intersection of perpendiculars from the angles on the opposite sides of triangles which stand on a given base and have a given area.

10. Investigate the conditions for a maximum value of a function of one variable.

11. Find an expression for the angle between a curve at any point, and the radius vector from the pole.

What theorem are we thus led to in the case of the rectangular hyperbola?

12. Integrate $\sqrt{x(x+1)}$, $\dfrac{1}{\sqrt{x(x+1)}}$.

13. Find the area of a curve in polar co-ordinates.

Apply the formula so found to determine the area which the latus rectum of a parabola cuts off.

NATURAL PHILOSOPHY.

Examiner, Professor ENGLAND.

1. If R be the resultant of a system of parallel forces P, P′, P″, &c., whose points of application are respectively distant from a given plane by x, x', x'', &c., prove that $R\bar{x}=Px+P'x'+$, &c.

2. If two weights, P and Q, connected by a string passing over the common summit of two inclined planes are in equilibrium find the strain on the string.

3. How is the dispensive power of a transparent substance ascertained?

4. What is Prevost's theory of exchanges?

5. Why is platinized silver used in Smee's battery?

6. How does the resistance to a galvanic current depend on the length and section of the conductor through which it is transmitted?

7. A mercurial barometer is furnished with a brass scale, what corrections should be applied to an observed reading for any change of temperature?

8. Describe the construction of the spectroscope.

9. Why is the velocity of sound in air altered by a change in temperature?

GEOLOGY AND MINERALOGY.

Examiner, Professor HARKNESS.

1. What is the nature, and what is the mineral composition of trachytes?

2. Name the several kinds of metamorphic rocks, and of what are they composed?

AppendixD.

Scholarship Examinations.

3. What is the nature and what is the composition of dolomites?

4. What is the nature of the fundamental rocks of Scotland—where do they occur, and what are regarded as their foreign equivalents?

5. What is the position of the Shalon rocks, where do they occur, and what fossils do they afford?

6. What is the position, and what are the characteristic fossils of the yellow sandstones of Ireland?

7. What is the nature and position of the Irish Calp

8. What is the nature and position of the Rothliegende of Germany?

9. What is the position of the Stonesfield slates, and what important fossils have they afforded?

10. What is the nature, what is the position, and what are the fossil contents of the Bovey Tracy beds?

11. What are the three minerals composed of oxide of titanium, and what are their crystalline systems?

12. Name the *ores* of iron from whence the metal is obtained, and give some of their most important characters.

SURVEYING, LEVELLING, AND MENSURATION.

Examiner, Professor JACK.

1. Practical examination in use of theodolite.

2. Practical examination in use of levels.

3. Describe in detail the following matters of ordinary occurrence in a chain survey (*a*) chaining over a ditch, (*b*) taking an offset of say two chains long, (*c*) completing the measurement of a line ending on another already measured.

4. Show that under all circumstances the point read off by a level on staffs at different distances are in one straight line, and hence explain what is the nature of the adjustment in the level with which the line of collimation is connected.

5. How would you ascertain whether the horizontal axis in a transit theodolite was in adjustment?

6. Explain the construction and principle of, and manner of using the planimeter.

7. Explain the method of chaining round an obstacle by the method of transversals, noting differences in the work that has to be done according to the condition of the line beyond the obstacle.

8. Give all the details of the method of setting out a circular curve in the field by the method of ordinates from the chord.

9. Give and prove the expression for the contents of a section of a cutting when the base is not parallel sided.

Early English Text Society's Prize.

Early English Text Society's Prizes (1875).

Examiner, Professor ARMSTRONG.

1. State what you know of the lives and works of Robert of Gloucester, Richard Rolle de Hampole, and Laurence Minot.

2. Turn the following passages into Modern English Prose, and comment upon any important grammatical peculiarities which they exhibit:—

(*a.*) Therafter sone to Glastnebury seint Dunstan anon wende,
He was abbod ther ymaked his lyf to amende.
And for he nolde bi his wille no tyme idel beo,
A priuei smyththe bi his celle he gan him beseo.

Early English Text Society's Prize.

For whan he moste of oreisouns reste for werinesse,
To worke he wolde his honden do to fleo idelnisse.
Serui he wolde poure men the wyle he mighte deore,
Al the dai for the loue of God he ne kipte of hem non hure.

(*b.*) Listnes now, and leues me,
Whoso lifes, thai sall se
That it mun be ful dere boght
That thir galay men haue wroght.
Thai houed still opon the flode,
And reued pouer men thaire gude;
Thai robbed, and did mekill shame,
And ai bare Inglis men the blame.

3. Explain the metrical system of each of the foregoing passages.

4. Write the Early English equivalents of *th* and *gh*.

5. Make a metrical analysis of the following passage, comment upon its grammatical peculiarities, and paraphrase it in Modern English prose:—

'Lordynges', quoth he, 'now herkneth for the beste;
But taketh it not, I praye you, in disdayn;
This is the poynt, to speken short and playn,
That ech of yow to shorte with youre weie,
In this viage, schal telle tales tweye,
To Caunterburi-ward, I mene it so,
And hom-ward he shal tellen othere tuo,
Of aventures that whilom han bifalle.
And which of yow that bereth hem best of alle,
That is to seyn, that telleth in this caas
Tales of best sentence and most solas,
Schal han a souper at youre alther cost
Here in this place sittynge by this post,
Whan that we come ageyn to Canterbury.'

6. Describe the characteristic peculiarities of Anglo-Saxon and Celtic poetry.

7. Particularize the various foreign literatures which had affected the literature of the English people prior to the death of Chaucer, and explain the manner and occasion of the influence of each.

8. Give an account of Chaucer and his works.

9. Write out the various tenses of the A. S. verb *lufian*.

10. State the chief peculiarities of English of the Fourth Period.

The New Shakspere Society's Prizes (1875).

New Shakspere Society's Prize.

Examiner, Professor ARMSTRONG.

1. Explain the differences between Miracle-Plays, and Moral-Plays, and name the principal English plays of each class still extant.

2. Give an account of the *Tragedy of Gorboduc*.

3. What were the chief features of the *Interludes* of John Heywood?

4. Give an account of Peele, Greene, and Marlowe, and of their relations to Shakspere.

5. To what period of Shakspere's life does the *Merchant of Venice* belong? Point out the various qualities of its versification, dramatic construction, and characterization, which distinguish it from earlier and later plays.

Appendix D.

New Shakspere Society's Prize.

6. Compare the versification and characterization of *King John* with those of *Macbeth.*

7. Trace the development of the plot of *Macbeth* from the opening of the second to the close of the third act.

8. Analyze Shakspere's apparent conception of the character of Julius Cæsar.

9. Compare Brutus with Cassius.

10. Analyze Mark Antony's oration.

11. Compare the two Portias, and comment upon them as examples of Shakspere's conceptions of female character.

12. Compare the comic element in the *Merchant of Venice* with that in *King John*, and endeavour to show in what ways the themes of the two plays might modify the comedy in each.

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